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ELECTRICAL BUREAU

ANNUAL REPORT

PHILADELPHIA

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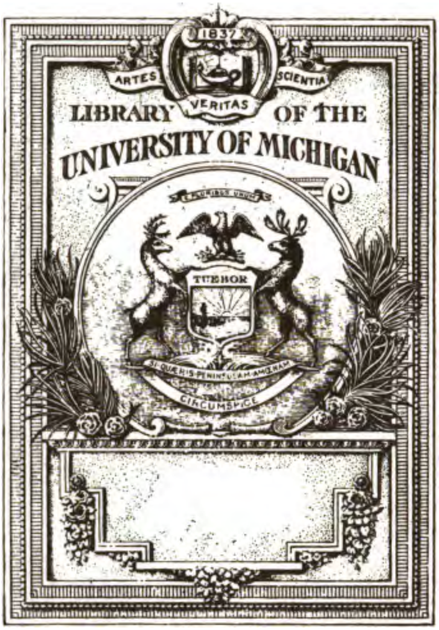

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THIRD ANNUAL MESSAGE

OF

CHARLES F. WARWICK

Mayor of the City of Philadelphia

WITH

ANNUAL REPORTS

OF THE

DIRECTOR OF THE DEPARTMENT OF

PUBLIC SAFETY

AND

CHIEF OF THE

ELECTRICAL BUREAU

FOR THE

YEAR ENDING DECEMBER 31 1897

ISSUED BY THE CITY OF PHILADELPHIA 1898

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1898.

OFFICE OF THE MAYOR

PHILADELPHIA.

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WILLIAM G. LEE.

Compliments of
David R. Walker,
CHIEF OF ELECTRICAL BUREAU,
PHILADELPHIA.

THIRD
ANNUAL MESSAGE

OFFICE OF THE MAYOR, CITY HALL.

Philadelphia, April 4, 1898.

TO THE SELECT AND COMMON COUNCILS
OF THE CITY OF PHILADELPHIA.

GENTLEMEN:—In accordance with the provisions of the Act of Assembly of June 1, 1885, I herewith transmit to your Honorable Bodies this, my Third Annual Message, upon the financial and general conditions of the Municipality. I also send the Annual Reports of the Directors of the Departments of Public Safety and Public Works, and of the President of the Department of Charities and Correction for the year 1897.

FINANCE.

The Annual Report of the City Controller shows that the total receipts of the City from all sources for the year 1897 were $32,683,285.98 and the total expenditures $29,616,999.07, showing an excess of receipts over expenditures of $3,066,286.91. The receipts include the loans that were negotiated during the year 1897.

The funded debt of the City January 1, 1898, less the City Loans held by the Sinking Fund Commission and including outstanding warrants, was $39,174,353.75; the funded debt January 1, 1897, less the City Loans held by the Sinking Fund Commission and including outstanding warrants, was $35,479,579.93, showing an increase of total debt since January 1, 1897, of $3,694,773.82.

The additions to the funded debt during 1897 were $5,054,275.00, made up in the following manner: Of the $6,000,000 Philadelphia and Reading Railroad Subway Loan of March 15, 1894, there was issued on account $2,400,000; for the improvement of Delaware avenue there was issued a loan of $2,000,000; for the Refunding Loan of June 17, 1897, $650,000 and unclaimed matured loans amounting to $4,275.00. The amount redeemed during the same period was $2,204,600, making an increase in the gross funded debt for the year of $2,849,675. Deducting the City securities held by the Sinking Fund Commission from this gross funded debt leaves a net funded debt of $37,939,220.22.

The real estate owned by the City as appraised by the Board of Revision of Taxes for the year 1898 amounts to $53,793,669, showing an increase over the appraisement of January 1, 1897, of $1,018,775.

It will be seen by the Controller's report that there is an apparent deficit. This, however, is susceptible of explanation. The appearance of even a seeming deficiency is misleading and results, in a measure, in affecting the credit of the City, especially in the minds of those who do not carefully study the details. The apparent deficiency is due to the fact that the personal property taxes for 1897, amounting to $1,031,608.93 and the amount due for schools, $1,289,934.16, making a total of $2,321,543.09, have not all been paid by the officers of the State to the City, as required by law, only $600,000 having been remitted, leaving a balance due the City and unpaid at the time the Controller made his report of $1,721,543.09.

The same condition has prevailed for years and it is vicious and unwarranted. In the settlement of the City's accounts for the year the absence of the latter sum from the City Treasury discloses a deficit amounting to $828,325.61, whereas had this money been returned to the City by the State, as required by law, there would have been a surplus shown of $893,217.48. Repeated demands upon the part of the City Treasurer to the State authorities, urging the payment of this money, have been made, but up to this time without avail. From the reports of the State Treasurer it is shown that there is a balance in the banks of deposit of over four millions of dollars. There may be some reason for this delay in payment, but up to this time it has not been shown. The law under which the City pays this money to the State requires that immediately upon payment by the City, the State shall remit the proportionate share to which the municipality is entitled.

In the matter of the loan of $11,200,000 that was pending for some time before Councils and defeated, it may not be out of place to refresh our memories and take a retrospective view of the past two years. In 1896 an ordinance was passed providing for the creation of a loan of $8,000,000 for miscellaneous purposes, and subsequently an ordinance for the creation of another loan of $3,000,000 for the improvement of the water supply. At that time the expenditure of money under the items of these loans was considered of the utmost importance, in so far as the welfare of the City was concerned. There was little, if any opposition to the contemplated improvements, and preparations were at once made by the authorities for the placing of the loans. The question was raised, however, by certain parties who contemplated bidding for the same, as to the right of the City to increase her indebtedness under the law, it being contended that she had reached the limit of her power to borrow. To have attempted at that time to place the loans, with this doubt in the minds of the people would have resulted in either the City receiving too little in the matter of premiums, or perhaps, no bids at all.

By reason of this condition of affairs, a Bill in Equity was filed by certain citizens in the Court of Common Pleas No. 1, asking that the City be restrained from the creation of these loans. After argument the Court held that the City had not reached the limit of her borrowing capacity and therefore had the right to increase her indebtedness to the amounts named in the ordinances. It was of the utmost importance, however, for the credit of the City, to have this question passed upon by the Supreme Court and an appeal was taken thereto, and in May last that Court handed down an opinion deciding that the question would have to be submitted to a vote of the people before the City's indebtedness could be increased. This necessitated waiting until the election in the following November and at that time, the question having been submitted to a popular vote, the City, by a majority of 17,475 votes, was authorized to increase her indebtedness in accordance with the items enumerated, to the extent of $11,200,000. From that date up to a short time since, Councils had this Loan Bill under consideration. For upwards of three years the matter received the attention of the people, and authority came from them in November last, virtually directing the enactment of an ordinance authorizing the increase of the indebtedness to the amount of $11,200,000 for the improvements provided for under the several and distinct items of the bill. In the meantime a measure introduced into Councils and known as the Schuylkill Valley Water Company's bill stood in the way of the passage of an ordinance authorizing said loan.

It has been contended in some directions, that the passage of the bill authorizing the creation of the loan would carry with it an appropriation. It is useless to say that this is not so; the bill simply provided for authority to increase the indebtedness of the City to the amount of $11,200,00, and such authority would not have carried with it in any way an appropriation, or power to expend one penny under any of the items enumerated. If this Loan bill had passed, separate bills providing for appropriations under the different items would have been introduced and referred to the proper committees and unless favorably reported by them and acted upon favorably by Councils, the appropriations and expenditures could not have been made.

The most urgent and important item under the said bill was of course, that of $3,700,000 for the improvement of our water supply ; this matter is referred to, however, under the distinct head of the Bureau of Water. The other items of the so-called Loan bill provided for the improvement of suburban roads, the completion of the Boys' High School and the erection of new school buildings, for building main sewers and the completion of the Aramingo Canal Sewer, for the building of a new almshouse, for the abolition of grade crossings on the line of the Philadelphia and Trenton Railroad, for the equipment and building of the Philadelphia Museums, for the building of an art gallery, for a library site and building, for the extension of Fairmount Park, for the repaving of streets, tramway streets and intersections and underground work incident thereto, for the building of bridges, for the improvement of public parks and squares, for the purchase of ground and the building of fire and police stations, and electrical and underground construction, for grading and repairs to paved streets, curved curbing, resurfacing asphalt streets, repairs to bridges, repairs to sidewalks, repairs to ditches and sluices, and for repaving with an improved pavement small streets, 40 feet or less in width from house-line to house-line and underground work incident thereto.

A careful reading of these items, I am sure, must convince every fair minded and progressive man in this community, that money expended in these directions would bring great results in so far as the health, safety, comfort, convenience and enlightenment of our people are concerned.

In order that this measure might receive popular support, I called about me a Citizens Advisory Committee composed of experienced, progressive business men representing every interest, and taken from every walk in life. This committee held many meetings, consulted with members of Councils (for the committee was appointed to advise not only with the Executive but the Legislative branches of the City Government), and they have loyally given their time and thought to the consideration of this important bill in its every feature, as affecting the interests and the welfare of the City.

It was contended a short time since, while this bill was pending in Councils, that it contained several objectionable features and that many members who were willing in every way by legislation to assist in the improvement of the water supply, could not vote for the bill in its entirety, and to meet this objection, I submitted a message to Councils calling upon both branches to disregard all factional considerations and acting singly for the welfare of the City, to consider alone that item providing for the improvement of the water supply, but even then the measure was defeated. I now call upon your Honorable Bodies to take up, at the earliest possible moment, the consideration of a loan bill, following in every particular the features of the original bill. There should be no opposition to the improvement and filtration of the water supply, to the improvement of suburban roads, to the completion of the Boys' High School, the erection of new school buildings, the improvement of our sewer system, the abolition of grade crossings, the extension of Fairmount Park, the common pleasure ground of the people, the repaving of our streets, especially the small streets, with improved pavements, the abatement of the Aramingo Canal nuisance, the equipment and building of the Philadelphia Museums, an institution that has already given to our City an international reputation, nor to the building of an Art Gallery and a Free Public Library. These last two are not mere luxuries, as has been intimated in some quarters; they are for the improvement, refinement and education of our people and may be a beginning that will ultimately make our City the art centre of this continent. Public spirited citizens who have devoted their wealth and time to the collection of pictures and works of art stand ready, whenever the opportunities are offered, to present to the City donations of immense value. Such collections will call to our City strangers from all over this continent and also from foreign countries. Even if we are to consider these matters from the most selfish standpoint, an appropriation made in these directions will bring ample financial return.

No city can stand still. She must either advance or lose her position. Philadelphia in the past ten years has progressed marvellously and to halt her now in her career would be most disastrous.

I cannot refrain at this time from calling attention to a gift that has recently been made to the city by a public-spirited citizen of his beautiful residence on North Broad street, to be used as a branch of the Free Library. The gift is to be coupled with a donation of pictures representing the best examples of American art, amounting in value to the sum of $400,000.

If the city be generous and broad in her liberality in the support of such institutions, she will induce generosity upon the part of her wealthy citizens. These are questions that should rise above all selfish or personal considerations, and I appeal to your Honorable Bodies not to deprive this City of the opportunity now offered, to secure those improvements that will be of incalculable benefit to our whole people and for all time.

DEPARTMENT OF PUBLIC SAFETY.

The report of the Director of the Department of Public Safety is full of interesting material and worthy of careful consideration, and I cannot speak too highly of the efficiency and loyalty shown by him in the discharge of his duty.

Bureau of Police.

The police force is well disciplined, under most excellent control, and has rendered most efficient service. Your attention is specially called to the fact that in certain sections of our City an increase in the number of patrolmen is required, and in the suburban districts, an increase in the mounted force.

An innovation was made during the past year in the assignment of a member of the force as a Drill Master, and already the value of his services is seen and appreciated.

Better accommodations and conveniences should be afforded the men in the different station houses. It will be seen by the report of the Director that 512 men are forced to occupy "beds in pairs." The station houses should be made as comfortable and as attractive as possible. Attention given to this matter will necessarily improve the *morale* of the force.

During the summer of 1897 11,719 vacant houses were under the care of the Bureau of Police, an increase of 1,253 over the year 1896. Of this number but 34 (12 less than in the year 1896) were entered and robbed of goods valued at $14,252. Goods to the amount of $1,388 were recovered. This gives some idea of the faithful services rendered by those men who watch during the period of vacation, when thousands of our citizens are absent from their homes.

Since my last annual report, I am glad to say that the question that had been raised as to the right of the City to appropriate money to the Police and Firemen's Pension Funds has been decided by the Supreme Court to the effect that the Municipality may make such appropriations. The work that these public servants are called upon to perform, often in the face of impending danger, requires courage and heroism, and to provide for their families in case of death and for them personally after a long period of faithful service, appeals not only to our sympathy but it is an imperative duty.

In the matter of Meat Inspection a great deal of valuable work has been done, and consequently much disease prevented. I refer you especially to the Director's report upon this important branch of the service.

Bureau of Fire.

This Bureau is in a most excellent state of discipline, The total number of fires during 1897 was 2,427, being 185 less than during the previous year. The total amount of loss sustained was $2,680,670, being an increase of $241,617 over the previous year.

In 1886, after a competitive test between the Rotary and the Piston types of engines, the former was considered the best. A few weeks since, another test was made by the Bureau in the presence of a committee of three citizens, experienced in these matters, and their report favors the use of the Piston rather than the Rotary engine. In view of this fact, I agree with the Director that hereafter the purchase of engines should be made only after a most careful competitive test.

A new danger in case of fire has arisen in this City within a comparatively recent period owing to the erection of very high buildings. Many of these structures are called fireproof, but experience has shown us that in frequent instances this is a misnomer, and it is of the utmost importance that special measures for protection should be provided. The suggestion that large mains should be laid from the Delaware river westward to Broad street on Market, Chestnut and Arch streets with a pumping station at the Delaware River, and a similar line of mains from the Schuylkill River eastward to Broad street on the same streets, with a pumping station at the Schuylkill River, for the purpose of giving direct pumpage of great volume and force in case of fire upon those main business thoroughfares, is worthy of careful consideration.

To show the dangers that are undergone and the heroism that is shown in this branch of the service, it is only necessary to state that 260 firemen, while in the performance of their duty, suffered injuries of a more or less serious nature.

Electrical Bureau.

The Electrical Bureau, as I have taken occasion to say heretofore in my previous messages is one of the best equipped and one of the most efficient in this or any other country. The plant is one of which the City has every reason to be proud.

Philadelphia, without question, in so far as I have been able to learn from personal inspection, is the best lighted City on this Continent. We have 7,119 lamps located in our streets which furnish not only illumination but provide safety and security for life and property.

The report of the commission appointed under resolution of your Honorable Bodies to inquire into the subject of an Electric Light Plant, to be owned and operated by the City, referred to in the report of the Director, merits your most careful attention. The report of the experts shows that an overhead system would cost $1,562,731, and its annual maintenance $583,664.74; that an underground system would cost $3,475,867 and its annual maintenance $732,210.18.

Bureau of Health.

The Bureau of Health last year lost by death two of its members, Dr. Peter D. Keyser, who died on March 9, 1897, after a faithful and intelligent service covering a period of eight years, and Dr. W. H. Ford, who died on October 18, 1897, after a like faithful and intelligent service covering a period of twenty-six years, and let it be borne in mind that these two officials served without remuneration, save that which comes from the satisfaction of a public duty loyally performed.

The vacancies caused by these deaths were filled by the appointment of James W. Walk, M.D., on April 9, 1897, and George Woodward, M.D., on December 21, 1897.

The members of the Board of Health cannot be too highly commended for the loyal and efficient services they have at all times given.

The general health of the City during 1897 was unusually good. The death rate was 18.72 per 1000, being the lowest record for thirteen years. Diphtheria as shown by the reports prevailed to a greater extent than for several years past. Scarlet fever had a slight increase in percentage over the year 1896. There was not one single case of smallpox in this City during the year, so far as is known, nor has there been a case since October, 1895. Typhoid fever caused 401 deaths, one less than during the previous year, although the number of cases reported was 2,994, an increase of 504. It is generally believed that this increase was directly due to the use of our drinking water in certain localities. Dr. Abbott, Chief of the Division of Bacteriology, in a report made by him as to the cause of this increase in these districts, shows proofs of the connection between the outbreak of typhoid fever in December and the overflow of the intercepting sewer.

Accompanied by several officials I made, a short time since, a personal inspection of the Municipal Hospital, and I desire to urge upon the attention of your Honorable Bodies the absolute necessity of an immediate appropriation for its sanitary improvement, especially of the main building, which, in its present dilapidated condition lacking proper accommodations, is a disgrace to our civilization and a reflection upon our humanity. The heating apparatus is most primitive and the system of ventilation most incomplete. On the upper floors, where the sick are confined, the food is received in and distributed from bath rooms, which are in close proximity to a double row of water closets.

There are no suitable conveniences for the physicians, the nurses and those having the care of the patients, but notwithstanding these unfavorable conditions too much praise cannot be given to those in charge of the institution. The cleanliness and the tidiness shown throughout, spoke in commendation of the care and devotion of those having the hospital in charge.

The buildings should be enlarged and greater accommodations provided at the earliest possible moment. Owing to lack of space the authorities are compelled frequently to have in the same ward patients with scarlet fever as well as those with measles. This should not be allowed to continue.

The Board of Health is now carefully preparing plans providing for the improvement and extension of this hospital, which plans will soon be submitted to your Honorable Bodies for consideration. This hospital unfortunately is looked upon as a pest house and many efforts have been made to remove it from its present locality, and so long as this question of removal is agitated, just so long will there be uncertainty as to what should be done in the matter of permanent improvements. This question should be set at rest and acted upon definitely. It is said by those who know that institutions of like character are located in the very centre of the large cities of Europe. The science of public sanitation has made such an advance in modern times, that surrounding neighborhoods are comparatively safe and free from contagion. So far as this institution itself is concerned it has never been shown that the health of the immediate neighborhood has in any wise been affected by its presence.

As to that dreaded disease small-pox, it would be wise to erect a separate hospital in some other locality or if ground could be secured in close proximity to the present institution, a building with all modern conveniences ready for any emergency should be constructed.

Bureau of City Property.

The Bureau of City Property should be specially commended for the care given to the public parks. They are the pleasure grounds of the people, the play grounds of the children and they should be made as attractive as possible.

The restoration of Independence Hall is making satisfactory progress, and it is hoped that during the coming summer the work will be completed and that this building so sacred and historic in its associations will appear as it did in 1776, during the period of the American Revolution. Much study has been given to the matter by the officials having the immediate charge of this important work. Plans and pictures of the period of the Revolution that could in any wise throw light upon the matter have been carefully studied and historical information wherever obtainable has been most diligently sought for, in order that the restoration may be as close in appearance to the original structure as possible. Great interest has been shown in this work by many of our public spirited citizens and to all those who have assisted us we return our most generous thanks.

Bureau of Building Inspection.

The work performed by this Bureau is of the most important character and I desire to say that it is most intelligently performed in so far as lies within its power.

The building permits for 1897 numbered 8,312, an increase of 1,092 over the previous year. I call attention to the statement made by the Director that the appropriations made to this Bureau for the year 1897 were $49,320, and the receipts $39,339.83. The ordinance under which building permits are granted was enacted a number of years ago, when the conditions were radically different from what they are to-day, and a judicious re-adjustment of the charges would easily make this Bureau self-supporting. An ordinance has been framed and will be introduced early in April with this end in view.

To give some idea of the amount of work done by this Bureau during the year 1897 it is only necessary to state that the Inspectors made 52,394 visits. The condemnations amounted to 996, embracing 1,663 buildings.

The ordinance of April 10, 1894, which authorizes the inspection of elevators, as I said in my last Annual Message, cannot be carried out because the force of Inspectors is totally inadequate. In this connection let me say, that it is estimated that there are about 10,000 elevators already in this City and but three inspectors. Every precaution should be taken in the construction of elevators and in view of the tall office buildings which have been and are now being erected, such precaution is an absolute necessity for the safety of our citizens. The most scientific appliances should be insisted upon, and provision made for frequent and careful inspection.

Bureau of Boiler Inspection.

The total number of boilers inspected by this Bureau during the year 1897 was 3,141, and a reference to the report of the Director will show that the receipts of the Bureau were $19,908.60, being $3,908.60 in excess of the expenses.

DEPARTMENT OF PUBLIC WORKS.

The Director of the Department of Public Works deserves much commendation for his able and conscientious discharge of his public duties. The immense amount of work done by this Department cannot be fully appreciated without a careful study of the Director's report.

Bureau of Gas.

The conduct of this Bureau remained under the control of the Department of Public Works until the City leased the same to the United Gas Improvement Company on November 30, 1897. The operations of the Bureau for 1897 until the lease was entered into, included the finishing of the 3,000,000 cubic feet holder at the Point Breeze Works, and the completion of Retort House No. 1 at the Twenty-fifth Ward Works. The total receipts, as reported for the eleven months to November 30, 1897, were $3,061,391.71. The gross profits for the eleven months were $382,662.12, not taking into account the expenses incident to betterments and the lighting of public street lamps as well as the miscellaneous expenses in the matter of the collection of the charges due the City for the consumption of gas.

In the matter of the lease of the Gas Works, there are some facts that I wish to submit at this time. In the beginning of August of last year a proposition was submitted to me by the United Gas Improvement Company providing for the leasing of the Gas Works from the City. The Company offered to expend in the space of three years $5,000,000 for permanent improvements to bring the plant up to the requirements of the day, and to pay a large sum of money annually into the Treasury of the City.

The principal features of the offer are so well known to your Honorable Bodies, that it is not worth while to refer to them specifically. When the proposition was made, the Company submitted a number of letters from prominent citizens and officials of other cities in which it was conducting its business, showing that it had given good service and entire satisfaction to the public. The proposition was also endorsed by many of our leading business men and had almost the unanimous support of the newspapers of this City. The opponents of the measure when it was introduced into Councils grew bitter in their opposition and in the heat and excitement incident to the time, statements were made which were not founded in truth.

The bill passed Councils and then came to me for my approval or disapproval. Immediately a Bill in Equity was filed in the Court of Common Pleas No. 4 praying the Court to restrain the execution of the contract. Pending the judicial proceedings the matter was held in abeyance. After argument the Bill was dismissed, the contract signed and the company put in possession of the property. Subsequently the Supreme Court affirmed the decision of the court below.

I believe this lease is in the interest of the community. The Gas Works, under the agreement, can be brought up to present scientific standards and will turn a much larger sum of money into the Treasury of the City, than could have been returned under Municipal management.

In my judgment no Municipality can as successfully conduct a manufacturing business as a private corporation.

The constant succession of administrations every four years, the consequent changes in the heads of departments and the inability to continue because of these changes, a settled definite policy looking to one end, must prove to every thinking man that these conditions greatly interfere with the successful operation of any manufacturing enterprise. No private business could prosper under such a system.

For years the complaints of the citizens have been constant in relation to the quality of our gas, and the administration has done everything in its power to secure appropriations for the improvement of the works.

In my first annual message I said that the Gas Works were one of the most valuable assets of the City and called attention to the fact that the sum of $54,589.59 was all that had been expended during the year 1895 for permanent improvements; that to keep the works up to the proper standard, it would be necessary to make greater improvements, not only in the manufacture, but in the distribution of the gas, that these improvements would call for large expenditures of money and I further stated that the gas, when it reached the consumer, was not of the quality that it should be and there was no need to conceal the truth.

In my last annual message I again called the attention of Councils to the fact that it would be necessary to expend large sums of money, not only for the introduction of improved and modern machinery but for the laying of new and larger mains for the proper distribution of gas and to further increase the holder capacity.

Our method of distribution was unsatisfactory and insufficient. I cited as an instance of this, that in one section of the City, three dimensions of main were used, the largest being six inches in diameter, whereas a main of 20 inches in diameter would be required for the proper distribution of gas throughout that locality. Similar conditions existed in several other sections of the City. It was absolutely necessary to secure large appropriations to make the improvements in the matter of distribution as required. These facts were admitted upon every hand; the question had been most carefully considered from every point of view, but we were unable to secure the necessary amount of money to bring about the changes required. The works could not be kept up to a proper standard under these circumstances and something had to be done. It was as though we had a leaky roof which we were constantly patching and repairing when the necessities of the case required absolutely a new one. In view of these conditions, when the proposition of the United Gas Improvement Company was made I deemed it worthy of consideration. It was endorsed by many leading business men of this community, by almost the entire press of the City, and the offer was made by a corporation with capital, with experience and already in successful operation in many of the cities and towns of the United States. It was officered and controlled by business men of our own City, and so organized that it could at once, in case of lease, take immediate charge of the works. After two months' careful study of the matter I submitted the proposition to Councils. Carefully I watched the progress of the measure through both Chambers and saw nothing to change the opinion I formed at the time of its original submission to Councils.

It was of the utmost importance that the lease should be made with a company so experienced, so organized, so equipped and so capitalized that there would be no delay whatever in the continuing of the work in the manufacture and supply of gas.

To have entered into an agreement with a company that had to be formed, place its stock and organize would have resulted perhaps in disastrous delay. In other words it would have been an experiment with an inexperienced company or corporation that might have involved the whole question not only in delay but in annoyance and expensive litigation.

For reasons best known to those who circulated the reports, it was stated that the Gas Works were to be sold, and the transaction was frequently referred to as a sale of the City property.

In my inaugural address I stated that the works should be put in the highest condition of efficiency, that it would be true business economy to construct in the old city proper new mains and provide new methods of distribution; that I had been informed by those who professed to know that the works had not kept pace with the discoveries and improvements made in the manufacture of gas. I further stated, and I have seen no reason since for a change of opinion, that the works should never pass from the absolute control and ownership of the City. In my first annual message for the year ending December 31, 1895, I again called to the attention of Councils the fact that improvements were urgent, but that the gas works should never pass from the absolute control and ownership of the City, and in my second annual message for the year ending December 31, 1896, I again used the same language. I have always opposed a sale of the Gas Works.

The contract of the City with the United Gas Improvement Company is in no sense of the word a sale, but a lease. The works have not passed from the control and ownership of the City, but have been rented for a term of thirty years with a right reserved in the City, to retake possession of same at the end of ten years. It was to the best interests of the City that something should be done and immediately done at the time the proposition was made. The City, if she so desires, may create a sinking fund with the money received annally from this company under the lease, and if it be to her interest ten years from the date of the said lease to take possession, she will be in a position to do so and receive at that time a plant that will have been brought up to date, and that will have every improvement known in the manufacture of gas, thus enabling the Municipality to conduct the business upon a profitable basis. The matter is entirely within the discretion of the people. Thirty years is a long period and perhaps prior to that time, gas in large cities will not be used for illuminating purposes.

After a most careful consideration of this matter for four months, I was clearly of the opinion when I signed the ordinance that the action of Councils was the proper solution of the case, and I confidently believe that the future will prove the wisdom of the position taken.

Bureau of Highways.

Philadelphia is as well paved as any City on this continent and ten years ago, no one would have predicted the marvelous progress we have made in the matter of improved pavements. No City on this hemisphere has ever had pavements laid at so little cost to itself. Officials from other cities who have visited us have been pronounced in their praise of the character of our highways. We have in the aggregate 1,000.36 miles of paved and macadam streets, of which 316 miles are occupied by Passenger Railway Companies which are compelled to keep and maintain in order the streets upon which their tracks are laid. We have 176.35 miles of macadam streets, of which 23 miles are turnpikes. In addition to the paved and macadam streets there are 412.64 miles of dirt roads. The work in the direction of improved streets should not be halted. The loan bill contained items amounting to $2,550,000, which money would have been spent in the further improvement of our highways.

Improved pavements, so-called, are one of the greatest inventions of modern times; they conduce to health and comfort in that they can be easily kept clean and are comparatively noiseless. Every small street in the City at the earliest possible moment should receive attention, and appropriations should be made looking toward the laying of improved pavements. The work done by the City upon small streets in 1897 covers about 4.55 miles.

Bureau of Street Cleaning.

It gives me pleasure to state that the work of this Bureau has been performed in a very satisfactory manner. The total number of complaints of unclean streets from all sources in 1897 was 2,401, which is 812 less than during the preding year, and it is to be hoped that with care even this number will be greatly decreased.

The garbage of the City has been collected daily and disposed of satisfactorily and in a sanitary manner. The total number of complaints received during the year amounted to 457, being 754 less than the previous year. It is stated, and without fear of contradiction, that this work is not better done in any City on this continent, and from information received no City has its work done in this regard more economically. The total amount expended last year for street cleaning and the removal of ashes and the removal and destruction of garbage was $866,402.62, the same character of work in New York costing, according to their reports, $2,959,085.48, and it must be remembered that the area of our City is more than twice that of New York City as it existed prior to the new charter.

There has been criticism in some quarters in relation to the awarding of the contract for the present year for the removal and destruction of the garbage, but this criticism is founded upon information that is erroneous and upon a misconception of the real facts. The proposals for this work were opened on November 30th, 1897, and among the several bidders for the work in the different districts were the following: The American Product Company, which bid for the First District, $54,200; Second

District, $59,700 ; Third District, $41,800 ; Fourth District, $93,000 ; Fifth District, $91,800 ; Case & Peoples, who bid for the First District, $25,000 ; Second District, $40,000 ; Thirtd District, $40,000 ; Fourth District, $80,000 ; Fifth District, $84,000 ; and Horatio P. Connell, who bid for the First District, $32,000; Second District, $39,800; Third District, $27,000; Fourth District, $57,000; Fifth District, $54,000. The bids of Mr. Connell were rejected, because of the fact that he had no plant and gave no evidence that in any reasonable time he would have a plant of sufficient capacity to meet the requirements.

The contract was awarded to the American Product Company, which had the contract for the previous year and had given entire satisfaction. There had been but very few complaints from any quarter, the method of the destruction of the garbage was most efficient, and the management of its business in no wise a nuisance.

The system used by Case & Peoples, the second lowest bidders, had already been tried in this City and had proved most ineffectual. A contract had been awarded for the year 1897 for the removal and destruction of garbage in the Fourth District to The Philadelphia Incinerating Company, which used this same system. No sooner was the plant in operation than it gave rise to complaints from the people living and doing business in the immediate locality. The Women's Health Protective Association, after careful investigation of the plant, made a public protest against its further continuance. At length the nuisance became so great that a public meeting was held in the Mayor's office to urge that some action be taken looking to its early abatement. At that meeting the parties conducting and controlling the plant specially requested that a sub-committee of citizens be appointed to confer with them in relation to a settlement of the matter. An offer was then made by them that if the plant were allowed to run for a few days longer it would be closed down and the nuisance at once abated. This offer was accepted and the business according to the agreement was stopped and the plant abandoned. So many were the complaints in relation to the plant while it was running, that to satisfy my own mind as to the truth, I personally visited it and although I did not enter the premises I was convinced by reason of the stench emitted that the complaints were in no wise exaggerated.

When Case & Peoples subsequently put in their bid for the present year to do the work under the same system, these facts were again submitted and a protest entered by the Women's Health Protective Association against the awarding of the contract to them. The matter was then carefully considered in every detail, and it was decided that there was but one thing under all the circumstances to be done, if we were to consider the health of the City and the comfort of the people and that was to award the contract to the American Product Company, the next highest bidder. This is one of the cases in which the authorities should exercise their discretion in awarding the contract not merely to the lowest bidder but to the best and most responsible bidder.

Bureau of Surveys.

The work under this Bureau is vast and of great importance and a careful study of the report of the Chief Engineer will be found to be most interesting and instructive. The several contracts for dredging in the Delaware River have proceeded satisfactorily, and it is expected that the work will be completed in the latter part of this year. We will then have a free and uninterrupted channel of 600 feet in width and 26 feet in depth at mean low water from the harbor of Philadelphia to the sea. It has been contended in the past that the obstructions in this river have greatly interfered with the commercial prosperity of our City. With the removal of these obstructions every opportunity will be given our merchants and enterprising business men to restore our commercial supremacy.

The contracts for improving the channel of the Schuylkill River were proceeded with, unfortunately, very slowly, in a measure due to accidents to the machinery of the contractors, but an improvement has since been shown and the operations, it is expected, will be completed in a few months, although not within the time limit.

The work of widening Delaware avenue and the extension of the City piers is progressing most satisfactorily, and when completed will provide an avenue 150 feet in width between Vine and South streets, and will, in every way, facilitate the commerce and business interests of the City.

It is of the utmost necessity that liberal appropriations for the construction of main and intercepting sewers should be made. This is a class of public improvements that is not sufficiently appreciated by the people, because of the fact that it is hidden from view, but nothing so conduces to the health of a community as a complete system of sewers.

One of the most important pieces of engineering work in the history of the City is the construction of the Pennsylvania avenue Subway and Tunnel, and I am glad to say that during the past year remarkable progress has been made towards completion. The judgment of the Chief Engineer of the Bureau was shown when he originally insisted upon having all the sewers and underground work constructed before beginning upon the subway proper. During the progress of the work there has not been any overflow and at no time has the work been interfered with from that cause. The retaining walls are almost completed, the excavating shovels are at work and before the end of this year such progress will have been made that the people will have an idea of the importance and usefulness of the project. From the beginning of the work until the present time, the business of the firms on the line of the improvement has not been interrupted or interfered with. The work incident to the underpinning and stone masonry has been done most successfully and scientifically and yet some of the leading manufacturing interests of the city are located on the line of this work. I cannot speak too highly of the engineering skill of those having in charge this great improvement. By this enterprise seventeen dangerous grade crossings will be abolished and on Broad street, the main thoroughfare running North and South, travel will be uninterrupted, and the Green street entrance to Fairmount Park vastly improved and relieved of many objectionable features. During the summer it is expected that Broad street, from Callowhill to Hamilton street, will be free of all obstructions and open to travel.

Bureau of Water.

The total receipts of this Bureau from all sources during 1897 were $2,971,357.52 as compared with $2,879,133.26 for the preceding year, an increase of $92,224.26. The expenditures during the year for permanent improvements and cost of maintenance were $1,665,153.21. The excess of receipts over expenditures or the net revenue from this branch of the City's service was $1,306,204.31.

In 1887 the total pumpage amounted to 32,426,779,765 gallons against 95,667,466,871 gallons in 1897, an increase of 63,240,687,106 gallons. In 1887 the consumption per capita per day was 89 gallons as against 187 gallons in 1897, an increase of 98 gallons per capita per day, or in other words an average daily consumption during 1897 calculated upon an estimated population of 1,385,734, of 187 gallons per capita per day, an increase in ten years of more than 100 per cent.

I think it will be admitted that this is a wasteful and extravagant use of water. It is a matter that calls for immediate consideration. The waste should be stopped or if it goes on at the present rate, no one can calculate what the result may be ten years from this date. It shows what a bountiful supply we have, but it also must convince every thinking man that such waste should not go on indefinitely. Nothing should be done to restrict the proper use of water in manufacturing industries, but at the same time it behooves us to consider immediately some method which while giving a bounteous supply, will prevent extravagance and wastefulness.

During the past year the relining of the Queen Lane and New Roxborough Reservoirs was completed and they both are now in service.

I am glad to report that a recent careful inspection of the Queen Lane Reservoir, shows that since relining. it is virtually water tight and is now standing the pressure of the maximum quantity without any perceptible diminution, save that which results from evaporation.

The Director of the Department calls special attention to the condition of the Belmont Pumping Station, which he says at this time is critical; that the flue system is in a precarious state and liable to collapse at any minute. If this should occur, all the pumps at this station would be thrown out of service for several weeks and in thirty-six hours, all that section of the City west of the Schuylkill River would be without water. If this occurs, somebody will be held responsible for negligence and the results might prove disastrous, and I cannot too earnestly call upon your Honorable Bodies to provide an appropriation for the improvements and repairs there required. Nothing is more costly than negligence in the making of needed repairs to machinery, and appropriations at this time should be provided for the necessary work in this regard required at Belmont, Queen Lane and Roxborough Pumping Stations.

The improvement of the water supply is a crying need. It is a matter that affects the health of every man, woman and child in this community and should receive immediate attention, for unless something be done to furnish a pure healthful supply water, not alone will the City be affected in so far as its inhabitants are concerned, but the result will be to keep from our midst strangers and visitors who at all times add to the wealth of a community. The fame and reputation of the City depend upon the intelligent settlement of this question. The typhoid fever, prevalent here, a short time since, brought us all to a realizing sense of the danger that confronts us. If the City had the money in hand, a wise solution of the question would be to bring the water from a pure source in large aqueducts to this City, but that would require so vast an expenditure of money that such a plan at present is practically beyond our reach. Fortunately we have at this time a plentiful supply of water, which no doubt will meet the requirements for many years to come provided we do not draw upon it too extravagantly. The only question to be settled is as to its quality. Inasmuch as we cannot bring our supply from a distance, it is a duty incumbent upon us to make pure and healthful by a system of filtration that which we have at hand, and I cannot too strongly nor earnestly appeal to your Honorable Bodies to immediately authorize the creation of a loan, so that an appropriation may be made providing for the construction and maintenance of filtration plants. As soon as the loan is authorized, the City will be ready through her officials, having charge of the matter, to submit, as I have already stated in a special message sent to Councils last February, a comprehensive plan looking towards the accomplishment of this object. All that we need now to make our water wholesome is the construction of filtration plants. Subsiding reservoirs go far towards the improvement of the water supply and we have accomplished much in that direction, but we must go a step further. We should unite our efforts to meet this great question intelligently and give relief at the earliest possible moment. Any unnecessary delay is a crime against humanity.

The net profits of the Water Bureau for the year as I have already stated amounted to $1,306,204.31. The sum which the people have authorized to be used for the improvement of the water supply is $3,700,000. In my judgment, this money should be used as far as it will go, in the construction of sand filtration beds. We have passed beyond the time of experimentation. There might be some question as to whether or not certain mechanical processes should be used but we have no time now to test them. There is one process known to nature which will filter water from any source and that is natural sand filtration. Wherever practicable, these natural sand filtration beds should be constructed, in close proximity to our reservoirs, but in the case of those reservoirs where by reason of the character of the locality or because of the expense incident to the purchase of land this system is not feasible, then the best mechanical process known, to meet the immediate requirements should be adopted. If this plan be accepted $3,700,000 will go far towards the solution of this much vexed question.

There is no need of further delay. Our duty is clear and imperative and the authority already given to Councils by the people is broad enough in its scope to give immediate and permanent relief to this community. Water is an absolute necessity. The health of our citizens should be the first consideration, and I firmly believe the plan above suggested will meet the exigencies of the case. The reports that have gone abroad in relation to the condition of our water supply have seriously affected the fame and reputation of the City of Philadelphia, and it becomes our duty not only as officials, but as citizens to settle this question without further delay.

The furnishing of water is to my mind clearly a municipal function. It is not in any sense of the word a manufacturing industry. It is simply the distribution of that upon which life and health depend, and with authority given by the people themselves to Councils to expend a large sum of money for this purpose, there is no excuse to put this matter off for further consideration. A loan should be authorized and an appropriation should be made, plans should be submitted, and contracts immediately awarded for the doing of the work required. The very moment two or three districts are supplied with wholesome water the question will be settled.

DEPARTMENT OF CHARITIES AND CORRECTION.

The President and Directors of this Department have at all times displayed earnest and loyal devotion to the duties of their office. Though serving without remuneration they have given their constant and unremitting care to the conduct of the Bureaus under their charge.

In my prior messages I have urged that it would be of great advantage to the Almshouse if it could be removed from its present situation. The location of such an institution should be in the suburbs, if possible, in a farming section.

The Hospital should not be interfered with. Both institutions, the Almshouse and the Hospital, would be greatly benefited by their separation.

As I have stated before, it would be a wise measure to provide for the consolidation of all the Poor Districts in this county and place them under the direct control of the Department of Charities and Correction. The Almshouse at all times is crowded and its accommodations over taxed, while some of the poor houses in the outlying districts have comparatively but very few inmates, and these should be used to relieve the overcrowded condition of the Almshouse proper. A bill was offered in the last Legislature providing for such consolidation, but unfortunately it did not succeed in passage; a like bill should be introduce when the Legislature again meets.

At the time of the destruction by fire of the State Capitol at Harrisburg I appointed a Committee of Citizens to secure if possible the assent of the State authorities to the removal of the Capital from Dauphin to Philadelphia County. Many meetings were held and an effort was made to arouse public sentiment, but unfortunately success was not reached. It would be not only a great advantage to our City but also to legislation to have the seat of the State Government located here.

Several events of great interest have taken place during the past year. The Society of the Cincinnati of the State of Pennsylvania, on May 15, 1897, dedicated the Washington Monument, which stands at the Green street entrance of Fairmount Park. The statue is imposing, artistic and the finest of its kind in the country. The event was considered of such importance that the President and Vice President of the United States and the members of the Cabinet took part in the ceremonies incident to the dedication. The whole affair reflected great credit upon our City.

The opening of the Commercial Museums on June 1, 1897, was an event of national interest. This institution has made rapid growth and its use and importance are appreciated throughout the length and breadth of this land and it has already received recognition and commendation from many foreign visiting Committees. The opening ceremonies were most impressive; the President of the United States and several members of his Cabinet took an active part in the event.

The statue of Stephen Girard, located on the west side of the City Hall, was dedicated on the 20th of May, 1897. The statue is a tribute to the memory of one who as a merchant and philantropist did much for the advancement of Philadelphia, and is a worthy recognition of his great and abundant charity.

These statues add greatly to the adornment of our City.

The Eighteenth National Saengerfest was held in this City in June, 1897, and continued for three days; it was one of the most successful of its kind ever held in this country.

Philadelphia is fast becoming a Convention City and visiting delegations have been much impressed with that hospitality that characterizes us as a people.

In conclusion, let me ask the assistance and co-operation of your Honorable Bodies in all those matters that will tend to the advancement of our City's interests. Much can be done to push the City forward and maintain the progress she has made during the past ten years, but great results can only be reached when we earnestly and devotedly unite our efforts for the accomplishment of the common good.

I am, respectfully,

CHAS. F. WARWICK,

Mayor.

ANNUAL REPORT

OF THE

Department of Public Safety

FOR THE

Year ending December 31, 1897.

OFFICERS

OF THE

Department of Public Safety,

December 31, 1897.

Director,

FRANK M. RITER.

Secretary—JAMES HOYT.
Bookkeeper—HIRAM HORTER, Jr.

Chiefs of Bureaus:

Police—ROBERT J. LINDEN, Superintendent.
Fire—JAMES C. BAXTER, Jr., Chief Engineer.
Electrical—DAVID R. WALKER.
City Property—A. S. EISENHOWER.
Building Inspection—WILLIAM C. HADDOCK.
Boiler Inspection—JOHN OVERN.

Members of Board of Health

ANTHONY A. HIRST, President pro-tem,
ALBERT C. DINGEE,
Col. J. LEWIS GOOD, Sectretary.
JAMES WALK, M. D.
GEORGE WOODWARD, M. D.
FRANK M. RITER, President ex-officio.
JOHN J. McCAY, Chief Clerk.

ELEVENTH ANNUAL REPORT

OF THE

DEPARTMENT OF PUBLIC SAFETY

FRANK M. RITER, Director.

Philadelphia, February 1, 1898.

Hon. Charles F. Warwick,
Mayor of the City of Philadelphia.

Dear Sir:—In accordance with the Act of Assembly I herewith transmit a summary of the operations of the Department of Public Safety, together with the reports of the Chiefs of the several Bureaus embraced therein, for the year ending December 31, 1897.

Bureau of Police.

The total number of arrests for all offences during the year 1897 was 62,628, being an increase of 4,556 over the year 1896. There were 25,147 arrests for intoxication and intoxication and disorderly conduct, being an increase of 2,067 over 1896; and the total number of lodgers accommodated in the station houses was 641,613, being an increase of 15,175 over the year 1896.

During the year 1897 there were 787 women arrested for street walking. The following disposition was made of these cases. Two hundred and fourteen were discharged by the Magistrates, 298 were committed to the House of Correction, 175 committed to the County Prison for short periods, 97 held to keep the peace, and five taken care of by various charitable societies.

There were in the same period 152 persons arrested for keeping bawdy houses. The following disposition was made of these cases. Thirty were discharged by the Magistrates, 15 committed to the House of Correction, 88 held for Court for trial, five held to keep the peace, and 14 committed to the County Prison.

There were likewise 306 arrests of inmates of bawdy houses. The following disposition was made of these cases. 102 were discharged by the Magistrates, 116 committed to the House of Correction, 78 committed to the County Prison, two returned to parents, six turned over to societies, and two held for Court for trial. All of which was accomplished without making the matter unduly conspicuous.

During the year 1897, 150 patrolmen were added to the force. A substantial increase in the police force is badly needed, their presence being urgent in the First, Twenty-first, Twenty-second, Twenty-sixth, Twenty-seventh, Twenty-eighth, Thirty-third, Thirty-fourth, Thirty-fifth, and Thirty-sixth Wards. In the Wards named the mounted service is the best that can be employed. Considering conditions it is desirable to erect the entire section of the City south of Wolf street, between the Delaware and Schuylkill rivers, into a thoroughly efficient mounted district. The mounted force of the other Districts should be very much increased. This is essential for the protection of property and persons in the suburban districts of the City.

The bicycle is a permanent feature of the equipment of the force and the squad using it has given great service on those highways which have become almost parades in the pleasant season of the year.

A new patrol station attached to the Twenty-sixth District at Trenton avenue and Dauphin street, was fully equipped and entered service on March 26, 1897. This makes a total of 23 patrol stations.

Believing that the morale, discipline and physical welfare of a force is increased by a systematic drill, Sergeant John Reed was appointed Drill Master, and since October has systematically drilled the force of the City. The value of this departure is already seen. The men themselves have cordially adopted it. It creates in itself an interest in their work.

It is important that an additional police tug be added to the force that can be used as a fire boat and of such a model as to be able to enter any dock at low water.

I have visited personally the police stations and many of them are dilapidated and inadequate for the use of the service, 512 men occupying the beds in pairs. This only needs to be stated to present convincing argument for additional accommodation in the police stations.

The number of houses vacant during the summer months and temporarily under the care of the Bureau of Police was 11,719, an increase of 1,253 over last year. Thirty-four of these houses (12 less than last year) were entered and robbed of goods valued at $4,252, of which $1,388 was recovered. Thirteen thieves were arrested in connection with these robberies.

The detective force during the past year has worked with energy and fidelity. It is a very small force and a vast amount of work is required of it. The force should be enlarged.

The efficiency, morale, energy and intelligence of the police force is steadily improving.

Fire Marshal.

The total number of fires was 2,427, being 185 less than the year 1896. The total amount of loss sustained by these fires was $2,680,670, being an increase of $241,-

617 over the prior year. Three persons have been arrested for arson, one of whom was acquitted by the Court, one discharged by the Magistrate and the third is untried and the case still pending in Court.

The Fire Marshal has inspected and reported on 28 places of amusement and 24 places for the storage of petroleum during the year 1897.

Some places of amusement have obstructions of a permanent character blocking the exits as planned by the architects in the original construction of the building. While there may be no means of compelling a theatre already built to change its lines, to make it as safe as possible, it is suggested that the license of every theatre should be revoked or not granted until these obstructions have been removed. Should a conflagration occur the extent of the catastrophe cannot be estimated. Such obstructions appear to be general in other cities.

Your attention is likewise called to the fact that in many of our great retail stores the aisles are obstructed temporarily or permanently by counters, heavy shelves, tables, show-cases, etc. The risk should a fire or panic occur in any of these enormous establishments would be very materially increased by the presence of these obstructions. It is therefore suggested that an ordinance be drafted prohibiting such use of the aisles.

Meat Inspection.

The detailed report of this branch of the service will be found with the other reports. It will repay a careful study. A brief synopsis discloses the fact that in 1897 there were inspected 129,028 head of cattle, of which 275 were condemned. 238 of these suffered from tuberculosis, seven from actinomycosis, and 30 from starvation, emaciation and other causes. There were visited during this period 4,368 slaughter houses and all market houses were visited twice a week.

There were 51,392 calves inspected, and of this number, 2541 were condemned as unwholesome and their sale prevented. All condemned cattle are destroyed.

There were 21 arrests during the year for selling unwholesome meat, and 24 persons were arrested for selling and exposing for sale unwholsome meat.

The untiring energy of Mr. Lowry in this exceedingly difficult work cannot be passed without special commendation. The disease preventive value of this work is of the utmost importance and the number of inspectors should be materially increased.

Bureau of Fire.

A full statement of the various fire companies, apparatus and men and the number of alarms answered during the year will be found in the acccompanying report of the Chief of this Bureau. The skill and courage of the members of the Bureau of Fire is of the highest order.

The City has been using for a number of years past the rotary type of engine. After competitive test in 1886 it was considered the best. The Bureau now has in its equipment 41 engines of the rotary type and five engines of the piston type. A serious criticism of the continued use of rotary engine was made by "The Times," in December. Deeming the matter of great importance a careful investigation was instituted as to the relative merits of the rotary and piston engines, in use in the Department, selecting two engines of about the same length of service. In this investigation the services of Coleman Sellers, Esq., S. M. Vauclain, Esq., and Clement R. Hoopes, Esq., were secured, three gentlemen of public spirit and of the most extensive knowledge in the manufacture and use of steam engines. They conducted a most careful inquiry into the entire matter and were cordially assisted by the Chief of the Bureau of Fire. Their report most unqualifiedly favors the use of the piston instead of a rotary engine. It is believed that the rotary engine is not used extensively, and I am of the opinion that to justify a continuance of its use it would have to be affirmatively established that it was markedly superior to the piston type, the result of the investigation however establishes the reverse. The purchase of engines hereafter will be made after competitive test.

Most of the engines in the centre of the City are of the No. 2 size. These should be changed as rapidly as possible to engines of the No. 1 size which throw a greater quantity of water and to a greater distance.

I have again to urge a marked increase in the number of fire companies protecting portions of the City that are now remote from any located company, and in addition urge the erection of additional companies in portions of the City devoted to large manufacturing and commercial purposes.

Permit me to repeat that for the protection of the exceedingly high buildings which have been and will likely be erected a greater supply of water is required. Large mains should be laid from the Delaware river to Broad street on Market, Chestnut and Arch streets, with a pumping station at the Delaware river for the purpose of giving direct pumpage of great volume and force in case of fire; and a similar line of mains be laid to run from the Schuylkill, eastward to Broad street, on the same streets with a pumping station located on the Schuylkill. Numerous plugs could then be placed connecting with these mains, which would throw a very great stream of water even without the employment of the steam fire engines. By the employment of a proper series of valves the entire pressure at the pumping station could be put upon any one of these streets, or divided as required.

The present accommodations for many of the firemen are quite insufficient for their comfort and health, and I desire to urge your Honor to call upon Councils for such an appropriation as will enable the old and dilapidated houses to be torn down and new ones erected in their place, or in the vicinity in which they now are.

There were 260 firemen who in the performance of their duty suffered injury of a more or less serious nature. Nothing could speak more graphically of the courage of the force and no comment need be made upon it.

I am glad to be able to announce that the Supreme Court has rendered a decision in which it permits the City to make an appropriation to the Police Pension Fund and the Firemen's Pension Fund. There are 66 persons deriving benefit from the Firemen's Pension Fund. This comprehends 1 assistant engineer, 6 foremen, 2 enginemen, 24 hosemen, 13 widows, and 18 children, and 2 dependent parents. The total sum paid to these beneficiaries in the year 1897 was $18,139.15.

There were erected 193 fire escapes in the year 1897.

Bureau of Building Inspection.

The work performed by this Bureau is of the highest importance. The record of the past year as shown by the following table indicates the great amount of work accomplished:

Statement of Permits, Operations, and Estimated Cost by Months for the Year 1897.

Months.	Permits.	Operations	Estimated Cost.
January	308	695	$1,128,920
February	371	685	1,053,085
March	882	1,748	2,851,160
April	946	1,843	3,395,980
May	888	1,645	4,149,305
June	743	1,291	3,198,570
July	636	1,042	2,202,930
August	685	1,069	1,611,495
September	814	1,470	1,989,505
October	870	1,564	2,188,895
November	678	1,043	1,169.485
December	491	842	976,440
Totals	8,312	14,937	$25,915,770

This shows an increase of 1,092 permits, an increase of 1,706 operations and an increase in estimated cost of $1,096,070 over 1896.

The appropriation to this Bureau for the year 1897 was $49,320, and the receipts were $39,339.83. The ordinance under which building permits granted is the source of this income. It was enacted a number of years ago when building conditions were very different from those of to-day. A judicious rearrangement of the charges would easily make this Bureau self supporting. An ordinance has been framed and will be introduced early in April looking toward this end.

The work of this Bureau is very extensive and is systematically and scientifically carried on. The total number of visits made by the Inspectors was 52,394. There were 966 condemnations embracing 1,663 buildings. Of this number 1,072 were for violations of the law and 591 were because the buildings were regarded as dangerous.

The work of the elevator inspectors has been carried on with unusual vigor. Let me again call your attention to the inadequate force of elevator inspectors as required by the ordinance of April 10, 1894. As yet no action has been taken by Councils to enable the Department to carry out the provisions of the ordinance. At least 21 additional inspectors and an increased clerical force will be required, together with a Chief Inspector who should be a scientifically trained engineer. The ordinance above referred to requires that every elevator shall be inspected by the Bureau of Building Inspection at least once every three months. You will recognize how impossible this is when you recall that there are about 10,000 elevators in Philadelphia and but three elevator inspectors.

High buildings render the use of elevators indispensable and yet there is no law providing for the selection of a competent person to be in charge of the elevator. In New York City in the last six months there were 24 fatal accidents. Every elevator should have at its base an air cushion which up to the present time is regarded as the best device should an accident occur to the elevator.

In pursuance of the report of last year Acts were introduced in the Legislature fixing the maximum height of buildings at three times the distance from the building at its base to the centre line of the street. This would be an inducement for the setting back of the line of the buildings and the widening of streets. The maximum height was fixed at 150 feet. The efforts in the Legislature were not successful. A bill was also introduced providing that all buildings should be fire-proof which extended to a greater height than seventy feet and also every hotel, apartment house, or lodging house containing more than fifty rooms above the first floor. This bill passed the Legislature but was vetoed by the Governor. Unless you should indicate to the contrary both of these bills will be reintroduced at the next session of the Legislature and pressed for passage.

The existing building laws should be amended so as to prevent open elevator shafts. They should be enclosed in an incombustible material. Too frequently they are the means of spreading fire and causing loss of property and life. All of the measures which the Department has advocated before the Legislature and which it will again advocate look toward the proper preservation of property and reducing to the minimum hazard the risk to human life in the various occupations throughout the City.

Bureau of Boiler Inspection.

The total number of boilers inspected and approved by this Bureau during the year 1897 was 3,141, in addition to which there were 92 locomotives inspected which had been manufactured for use in Russia, China and Japan by the Baldwin Locomotive Works.

The receipts of the Bureau during the past year were $19,908.60, being $3,908.60 in excess of the expenses of the Bureau.

Bureau of City Property.

This Bureau has in its charge the maintenance and repair of all property occupied by the Department of Public Safety.

The seven public baths owned by the City were opened June 21st and closed September 25th. During that time 2,853,372 baths were taken in them.

There were 406 bodies received at the Morgue and 203 bodies interred in the City burial ground. The crematorium received the remains of 62 bodies.

The enlargement of police station houses, which was made necessary by the crowding of the men has been carried on as rapidly as the appropriations for the purpose will admit. In many instances two men use the same bed, one occupying it immediately after the other. These unfortunate conditions exist in dormitories in sixteen districts. The Department is adding additional stories to the station houses thus enabling each to get as much dormitory room as possible.

The work on the public squares is being prosecuted by the City Forester and with very gratifying results. The squares are attractively planted with flowers, bushes and trees. Old trees are being removed and new ones planted wherever it is found advisable to do so.

A small pavilion has been erected at Allegheny avenue, on the Delaware river, by the City in which the Civic Club provided concerts during the summer evenings.

The Municipal Band continues to grow in favor and performed during the summer months at 23 squares, giving 90 concerts in all.

The work of the restoration of Independence Hall is progressing with the utmost care. The final plans for the front elevation follow the outlines in Scull and Heap's plan of the City of Philadelphia and environs published according to the Act of Parliment on March 12, 1777. The plans first adopted were modified to make the cornice of the arcade on a line with the cornice of the wing buildings. This will be in harmony with the engraving of Scull and Heap's plan as well as clearly shown in other prints, also in the oil painting by Peale of Chevalier Girard, and likewise in the water colors by Peale. The oil painting of Girard was painted in 1778 and has for a background of the portrait a picture of Independence Hall, arcades and wing buildings. These models have been followed. A statement of the progress of the work and the chronology of the building will be made later for the full information of the public which it is believed has to some limited extent been laboring under the impression that the buildings taken down were of ancient date. I may briefly state here that the buildings taken down were erected in 1813. The period of restoration sought to be produced is the revolutionary period of 1776. I am confident that before the 1st of July all the work at present contemplated will have been finished.

The work of the Public Building Commission would seem to be about complete. The care of this building naturally falls within the work of the Bureau of City Property. It is therefore suggested that the Commission be requested to inform your Honor when they anticipate being able to hand the building over to the City. Eighty-four of the rooms of the Public Buildings are now cared for by the Bureau of City Property, and this is not half the number occupied for the City government.

The receipts of this Bureau last year were $86,905.96, this being an increase of $9,347.29 over the year 1896.

Mr. Eisenhower urges and I think with a great deal of sound reason, the necessity of abolishing the old market sheds and curbstone markets. The revenue from them each year decreases without any abatement of the nuisance to residents and storekeepers along the lines of the markets. The more dilapidated the markets, the greater the cost of maintenance.

Electrical Bureau.

This Bureau under its very able management continues to rank first in this country.

During the year 28,632 feet of conduit were laid aggregating 203,591 feet of duct. This will make the total number of feet of conduit laid and owned by the City 254,792, representing 1,766,366 feet of duct.

It has been the constant aim of this Department through this Bureau to endeavor at the very earliest time possible to have all of the police and fire alarm signal, and telephone service placed underground. This insures better and more satisfactory service and less liable to be affected by storms or climatic conditions.

During the year the cables laid in the various conduits in the territory lying between Callowhill, South, Twenty-third streets and the Delaware river, have enabled the Electrical Bureau to complete the work upon which it has been engaged for several years, namely, placing on underground wires all fire engine houses, police stations, fire and police signal boxes, the police and fire telephone system and the general telephonic service of the City within the territory above mentioned. This work will insure better service and will be safe from any interruptions from storms and other accidents resulting from sources which are menaces to overhead construction. The total amount of cable laid during the year amounted to 47,520 feet, making the total number of feet of cable owned by the City 11,658,405 feet, or 2208.165 miles of cable underground. I concur in the recommendation of Chief Walker that Councils be urged to make liberal appropriations for the completion of this work, so that at an early date all of the City's service will be underground.

There are 889 setts of telephones under the direct supervision of this Bureau, and the total number of calls, not including those from the police patral service, was 911,778. The total number of police signal service calls was 5,034,641, of which 49,390 were wagon calls distributed as follows:

Conveyance of prisoners	32,041
Conveyance of injured persons	7,402
Conveyance of officers to fires	1,187
Miscellaneous work	8,760
	49,390

This will in some measure give an idea of the work in this branch of the service and which I believe is giving in every way satisfaction.

The trolley service of this City which is probably more extensive than any other in the country, did not make any very great extensions during the year yet they have been renewing the bonding of their tracks, renewing overhead wires worn by trolley wheels, placing new and larger return cables underground and otherwise improving their service, all of which work is supervised by this Bureau. By careful supervision trouble from electrolysis which has caused great annoyance and expense in other municipalities has thereby been prevented.

The City is considered one of the best lighted and perhaps this had better be set forth by an abstract from Chief Walker's report. It states "Philadelphia leads the cities of the country in many of its municipal affairs; but in none perhaps so decidedly as that of the lighting of highways. There are few which have systematized their methods of illumination as has been done here and none that will produce so many well lighted streets. There are 7,119 electric lamps located in our streets. By judicious arrangement they conserve to the comfort and security of all."

There are 37 engine and patrol stations that have been wired and are lighted free by the several electric light companies.

The price of elctric lighting for the year 1898 has been reduced to an average price of about 32.5 cents per lamp per night, a saving of about $18,777.30 over the year 1897.

The average price for furnishing electric light has decreased as will be seen by the following table:

Average price per lamp per night for 1895 was 41.15 cents.
Average price per lamp per night for 1896 was 35.5 cents.
Average price per lamp per night for 1897 was 33.3 cents.
Average price per lamp per night for 1898 was 32.5 cents.

In the report for 1896 attention was called to the appointment of a Commission under a resolution of Councils to inquire into the subject of an electric light plant to be owned and operated by the City. Chief Walker has incorporated the report of this Commission in his report and it may be of some importance and worthy of consideration. The report presents principally two plans, one with an overhead system, cost for plant, $1,562,731, and estimates the annual maintenance at $583,664,74, the other with an underground system, cost for plant, $3,475,867, and an annual cost for maintenance of $732,210.18.

The report of the Commission is the first systematic effort on the part of the City to establish its own electric light plant and its recommendation should be considered and acted upon at an early date, or else permanetly abandoned.

The rental received from ducts occupied by various companies amounts to $7,884.68.

The total number of police patrol boxes now in use by the Department and under the supervision of this Bureau is 546 for police purposes, and 16 in use by private parties from which the City derives an income.

The various telephone, telegraph and electric light companies paid into the City Treasury $36,049.50, as license charges on poles, wires, etc.

The total revenue from all sources was $46.304.04.

The report of the Chief of the Bureau is worthy of study. The reputation of our electric system is second to none and should be looked upon with pride. Its methods are sought for and plans of its work are sent not only to cities within our own land but to many others, owing to its superiority.

Bureau of Health.

The Board of Health serves without compensation. The work of its various divisions is extensive and complicated.

It cannot be properly carried on without a general executive head responsible for the administration of its duties.

The Bureau of Health consists of the following Divisions: that of Registration of Births, Marriages and Deaths, of the Municipal Hospital, of the Medical Inspectors, of the Nuisance Inspectors, of House Drainage Inspection, of Milk Inspection, of Disinfection and of Bacteriology and Pathology.

The Board met with the loss of two members through death:

Dr. William H. Ford, died on the eighteenth day of October, 1897. He has been a member of the Board of Health for 26 years.

Dr. Peter D. Keyser, died on the ninth day of March, 1897. He has served upon the Board for eight years.

Appropriate resolution were presented and adopted setting forth the services of these gentlemen as members of the Board of Health.

These vacancies were filled by the appointment of James W. Walk, M. D., on April 9, 1897, and George Woodward, M. D., on December 21, 1897.

The health of the City during 1897 was unusually good. No epidemic of any kind existed, the death rate, 18.72 per 1,000, being the lowest record for 13 years.

Diphtheria seems to have been more prevalent than for several years. There were 1,474 deaths from this cause, an increase of 269 over 1896. The total number of cases reported was 5,405, an increase of 1,840 over the previous year, and a death rate of 27.28. All cases of membraneous croup are included under the head of diphtheria. Over 35 per cent. of the diphtheria cases reported in 1897 occurred within the last quarter of the year, while the death rate during the period was slightly lower than the average or 26.32 per cent.

Of the total number of cases returned in the last quarter almost 28 per cent. occurred in the Twenty-second and Thirty-third Wards. The Medical Inspector and his assistants, together with the Inspectors of Nuisances, made a thorough inspection of the wards mentioned and many causes that were held to be instrumental in the spreading of the disease were promptly removed. With the sanction and co-operation of the Board of Public Education the public schools were inspected, and recommendations made and carried out which proved to be of material benefit in checking the course of the disease. During the holidays, which were extended for the purpose, school houses were fumigated and disinfected.

Scarlet fever caused 282 deaths, an increase in percentage of 2.14 over 1896. There was not a single case of small-pox reported during the year, nor has there been a case in this City since October, 1895.

Typhoid fever caused 401 deaths, a decrease of one over the previous year. The number of cases reported was 2,994, an increase of 504 over 1896. The death rate was 13.39 for the year and but 11.53 for the last quarter. During the month of December 258 cases were reported from seven wards alone, or over 53 per cent. of the total number reported from all wards. Of these wards there were reported from the Fifteenth Ward, 28 cases; from the Twentieth Ward, 27 cases; from the Twenty-eighth Ward, 34 cases; from the Twenty-ninth Ward, 94 cases; from the Thirty-second Ward, 32 cases; from the Thirty-seventh Ward, 22 cases; and from the Thirty-eighth Ward, 21 cases. An investigation as to the cause of the sudden increase of typhoid fever in the above named wards was ordered and a report thereon was submitted by Dr. A. C. Abbott, Chief of the Division of Bacteriology. That report establishes direct proof of the connection between the outbreak of typhoid fever in December and the overflow of the intercepting sewer on the 16th of December,

1897. It further shows that the excess of fever in the Queen Lane District was the result of the use of the water from the Queen Lane Reservoir which was being filled at the time of the overflow of the intercepting sewer.

There were 335 more deaths from pneumonia than from consumption, the number of deaths from the two diseases being 2,723 and 2,388, respectively. There was an increase of 18 in the number of deaths from pneumonia and a decrease of 126 from consumption.

The deaths of children under five years of age were 7,605, which is 33.45 of the mortality of all periods of life. For many years there has been a gradual decrease in the percentage of deaths of children under five years of age.

The total number of deaths from all causes was 22,735, a decrease of 1,247 over the previous year. The death rate from all causes based upon a population of 1,214,256 was 18.72 per thousand or one death to every 53.40 persons living.

The total number of births reported during the year was 29,591, a decrease of 162 over the previous year. The birth rate was one to each 41.03 persons living.

The number of marriages reported during the year was 7,963 or 15,386 persons married. The marriage rate was one to each 78.92 of the population.

There were 6,329 interments in cemeteries contiguous to the thickly populated and built up portions of the City. This class of interments has often been condemned and such cemeteries should be closed to further burials. The placing of bodies in the vaults beneath the parish house of Christ Church was prohibited inasmuch as the house is constantly occupied by children.

The number of complaints of nuisances amounted to 21,576, of which 18,678 were well founded and 3,606 dismissed. The usual house-to-house inspections were conducted during the year and disclosed a better observance of sanitary laws. These inspections covered 16,572 premises.

Inspections were made of slaughter houses, cemetery vaults, lodging houses, etc., and I would recommend that abattoirs should be established and legislation asked for to compel the slaughtering of all cattle in them, under the proper sanitary regulations. This would do away with a large number of slaughter houses in different sections of the City and at the same time concentrate the powers of inspection.

Strenuous efforts have been made for years to rid the City of the nuisance caused by the keeping of hogs. In most part these efforts have been successful, but there still exists many persons in the southern section of the City who persist in keeping hogs and feeding them upon garbage. On December 17th a number of these persons were arrested and subsequently indicted by the Grand Jury and they are awaiting trial.

The bakeries inspection law, the enforcement of which was charged to the State Factory Inspectors, has improved the sanitary condition of bakeshops in a marked degree.

The public schools have been inspected during the year by the Medical Inspector and his assistants, and many defects were pointed out which it is believed will be remedied by the Board of Public Education.

The disinfecting corps performed 8,275 disinfections during the year. The importance of this work has never heretofore been fully realized. The growth and extent of the City makes it imperative for the proper performance of this work that at least six disinfecting stations be established at proper places throughout the City so that all bedding, clothing, carpets, etc., may be easily subjected to the live steam process which at 220 degrees destroys all germs of disease. These are inexpensive, take up but little room, have no danger in themselves and yet tend to make the work of the Board of Health more efficient.

The Division of House Drainage had 13,820 plans submitted to it, of which 6,383 were for new and 7,437 for old buildings. The number of plumbers registered was 885.

The number of quarts of milk inspected in 1897 was 545,873, an increase of 140,903 over 1896. Of these, 8,285 quarts or 1.52 per cent. were condemned for adulteration with water and 31 quarts were found to be artificially colored. In 1892 the percentage of adulterated milk was 11.15 per cent.; in 1897, 2.38. There were 56 prosecutions during the year and true bills were found in every case. Eighteen defendants pleaded guilty, three were convicted, two were discharged by the Magistrates, and 31 cases are pending, awaiting trial.

During 1897 the Chemical Laboratory devoted much time to water analysis for the benefit of the Bureau of Water.

The number of patients admitted to the Municipal Hospital was larger in 1897 than in any other year in the history of the institution, numbering 2,179 as against 1,252 in 1896. This increase can mainly be accounted for by the diminishing of the repugnance which has so largely existed heretofore to becoming a patient in the Municipal Hospital. Of the total number admitted 1,295 suffered from diphtheria. There were 858 scarlet fever patients.

No more serious question is presented for municipal consideration than the one involved both in the permanency and extension of the work at the Municipal Hospital. That it has been deprived of its natural and legitimate assistance by reason of the uninterrupted agitation seeking its removal from its present location cannot be doubted. Existing prejudice would naturally develop oppsition and seek to prevent the adoption of any new site for a municipal hospital. It is deemed a matter of great importance that the question of the location of a municipal hospital should be eliminated from all consideration and the present location considered a finality. There is ample room in the immediate vicinity for the indefinite extension of the service to be rendered by the municipal hospital. The existing plant, excepting alone the modern pavilion used in cases of diphtheria, is inadequately supplied in every particular, and the success of the administration of the Municipal Hospital from a medical standpoint is a surprise and tribute to the genius of those having the care of the sick under their charge. It is important that the accommodations should be ample and that the City should have the use and advantages of modern appliances. The possibility of having cases of small-pox taken to the hospital is unfortunate. It gives the place the horrible character of a pest house. The objection arising from the possibility of treating small-pox at this place could be entirely eliminated by the purchase or maintenance upon the outskirts of the City of a small piece of land of four or five acres in which, should cases of small-pox arise, or an epidemic of the disease appear, the patients could be taken at once. A very inexpensive pavilion of wood could be erected and the place be kept in readiness for use at any time. This would leave the Municipal Hospital free to deal with cases which do not create in the mind of the public a high degree of apprehension.

With this in view a central heating, lighting and washing plant should be established at the Municipal Hospital, proper accommodations for the employees, additional stable and disinfecting facilities, a pavilion for mixed diseases, an additional pavilion, a dead house and a mortuary chapel should also be added.

The entire question of the organization of the Municipal

Hospital has been referred to the Board of Health, and at the earliest time practicable a report of their deliberations with suggestions and plans of a most complete order will be submitted.

It is learned that a movement is on foot to put a pay hospital in the immediate vicinity of the Municipal Hospital for the treatment of contagious diseases. This should be welcomed. It is of great importance to persons of moderate means who, living in hotels or boarding houses or in their own homes, suddenly find themselves stricken with contagious diseaese; such as diphtheria, scarlet fever, or a disease of a similar character, that there should be a hospital where they can be sent and have proper medical attention and for which a reasonable charge would be made.

The development and growth of our Commonwealth as exhibited in our cities has completely changed conditions heretofore existing. The isolation of a community and its control over its own acts has been regarded as an inestimable privilege. The rapid growth of our municipalities has devloped it into a menace. No longer should it be possible for a City to have its source of water supply menaced by another, or the other to menace the former by the distribution of its sewage, both depending alike upon the accident of location. The question of both water and sewage from a health standpoint must be taken and considered together. To do this effectively I am of opinion that the State should be divided into sections comprising its great valleys and water-sheds, having over each territory so indicated a board with plenary power to take land and to preserve secure the source of supply of water; and to control municipalities in the methods of distribution of their sewage. This power might be vested in the State Board of Health with appropriate legislation enlarging its powers. The total inefficiency from any view of municipal government which permits a City or town to provide for its own sewage without regarding the existence and health of those who live between it and the mouth of the stream which it utilizes in this respect cannot be urged too strongly.

The Bacteriological Division is demonstrating the wisdom of its creation and is being used by physicians at large with the greatest confidence. Arrangements are being made which will develop an intelligent alliance between the Bacteriological Division and the Division of Disinfection, which will be of great value to the community.

Special Recommendations.

1. An increase in the police force of the City as suggested, especially of mounted men in the suburban districts.

2. An increase in the fire force as essential to the proper protection of property in certain sections of the City.

3. The appointment of an Executive Officer for the Board of Health.

4. The passage of an ordinance of Councils regulating the fees of the Bureau of Building Inspection for building permits and inspection of plans.

5. The thorough and complete electric lighting of the City from a police standpoint.

6. The construction of main conduits by the City for the use by all companies using electricity for any purpose.

7. The appointment of a committee to consider the older part of the City for the purpose of ascertaining those streets which are not public highways, and having them under the Act of Assembly placed upon the City plan as such, so that they may be properly suplied with water, sewers and light.

8. The appointment of elevator inspectors and the adoption of some rule which would compel all buildings to use some system which would tend to prevent injury arising from defective elevator machinery.

9. The vesting by the State, in an appropriate body, of the power to preserve the sources of water supply, and control the distribution of sewage by municipalities.

10. The passage of an ordinance prohibiting the obstruction of aisles in our great retail stores.

In conclusion, I desire to inform you of the deep sense of obligation I am under to the Chiefs of the various Bureaus of the Department of Public Safety, and all their subordinates and in regard to the gentlemen connected with my immediate office to assure you of their unflagging zeal in the complicated and often delicate work entrusted to them, and my unbounded confidence in them.

To them and to all members of the Department of Public Safety I desire to express my personal appreciation and gratitude.

I remain, with respect,
Yours truly,
FRANK M. RITER,
Director.

ANNUAL REPORT

OF THE

Electrical Bureau

For the Year 1897.

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ANNUAL REPORT

OF THE

Electrical Bureau

For the Year 1897.

Philadelphia, February 8, 1898.

Frank M. Riter, Esq.,
Director, Dept. of Public Safety.

Dear Sir:—In my report herewith submitted will be found details of the extensions, improvements and maintenance made by this Bureau during the year 1897, to the various systems under my care, being the forty-second year in its history, and my fourteenth as Chief.

Suggestions, Recommendations and Comments.

The Bureau has persistently each year in its annual report, and at every opportunity between those times, kept prominently forward the pressing need of legislation favorable to the extension and improvement of all the services under our supervision and particularly those of the Fire Signal service, the Police Signal and Telephone service and the underground system of cables, embracing the Police, the Police Signal, the Fire Alarm, Fire Signal, the Fire Telephone and Municipal Telephone circuits, upon which the successful operations of the Bureau of Fire and Bureau of Police and a quick transaction of the electrical business of the municipality largely depend.

By a vote of the people at the general election on November 2d last, it was decided to increase the City's indebtedness twelve million two hundred thousand (12,200,000) dollars; among other items was one for three hundred thousand (300,000) dollars for "New Police and Fire Stations, and electrical and underground construction." It appears from the wording that the framers of the bill intended this Bureau to receive a pro rata share of the loan when negotiated. I would respectfully suggest that, when available, a liberal portion of the amount mentioned be set aside for the use of this Bureau in the improvement and extension of the Fire Telegraph, the Police Patrol and Signal System and its underground service.

Conduits.

In the laying of conduits, as in all other work under this Bureau, a close attention to details and a personal supervision, by the officers, of the work done by men in the employ of the Bureau, enables us to utilize the appropriations made, to their fullest extent, the work thus performed being decidedly more satisfactory than when done by others under contract. During 1897, twenty-eight thousand six hundred and thirty-two feet of conduit, aggregating two hundred and three thousand five hundred and ninety-one feet of duct, was laid. A table showing the price per foot, per duct, will be found under the heading "Conduits."

The rental, by private corporations, of spare ducts in the City's conduits, who are desirous of placing their wires underground is but an endorsement of a policy outlined by this Bureau some years ago, that it were far better in every way for the City to lay all the conduits and lease to others, than to permit each separate company such a privilege.

We have at present underground conduit facilities, both of our own, and that belonging to others, in which we have privileges, to place a large amount of our service, were we financially empowered to purchase cable to do so.

Cables.

Actuated by a desire to place our wires where they will be free from interruption, we have been placing underground each year, for a number of years, such amounts of cable as our appropriation would admit.

The cable laid during 1897 between Callowhill and South streets and the Delaware river and Twenty-third street, has enabled us to complete the work planned several years ago for placing on underground wires all Fire Engine Houses, Police Stations, Fire Signal Boxes, Police Patrol Signal Boxes, the Fire and Police Telegraph System, and the general Telephonic Service of the City, within the above mentioned bounds; here they will be safe from storms and other interruptions, and can be relied upon to perform such services as may be required of them.

While this disposes of the services within the limits of the old City proper, the other sections are equally in need of getting at least a portion of their long leads of wire underground. The section over which we are the most concerned is that lying northeast from the City Hall to Frankford. Should we be able to secure a portion of the loan as before mentioned, it would enable us to purchase cable to partially equip the services in this direction.

Police Telegraph.

By referring to the table giving the operations of the Police Telegraph, it will be seen by the amount of increase over 1896 that the value of this service is fully appreciated by the municipal authorities using it.

For the relief of the circuits of the Police Telegraph system that were heavily overloaded, two new circuits have been run, one of them entirely underground.

Police Patrol.

As stated in my report for 1896, a number of the Police Patrol boxes placed in the service during 1884 made of the light material then used, had worn out and were only kept in use by repeated repairs, and should be replaced with the newer, stronger and better built instruments; as nothing has been done toward renewing them, the necessity for their retirement is still more strongly apparent, by the addition of another year's use to their already depleted condition.

Two police districts, the Third and Fourth, were placed on underground wires during the year, improving the service and adding greatly to their efficiency.

Fire Signal and Telephone. Fire Alarm.

In keeping with the other systems under our care, the Fire Signal and Telephone and the Fire Alarm systems have received their share of improvements; two new signalling and telephone and two new alarm circuits have been placed entirely underground in the old City proper, thus insuring the portion of the Bureau of Fire lying within that territory, receiving (no matter what the climatic conditions) all alarms of fire and the ability to converse by 'phone without difficulty.

Among the inhabitants of our City, there are comparatively few who know of the extent and value of their municipal possessions and particularly those embraced within the services under the care of the Electrical Bureau; the work done by us is performed so quietly and effectively that few are aware of its existence, or of the immense amount of detail necessary to have brought the various systems to their present state of efficiency; it is satisfactory to know, that, barring the action of the elements on those of our wires that are overhead, every instrument under our care will perform the duties prescribed for it without fail.

Fire Signal.

There are, within the one hundred and twenty-nine square miles included within the City limits, a total of two hundred and eighty-one thousand six hundred and fifty-one buildings of all kinds, valued at eight hundred and sixteen million eight hundred and forty-one thousand and eight hundred and forty-four (816,841,844) dollars, of which two hundred and fifty-seven thousand three hundred and seventeen are dwellings, inhabited by one million two hundred and fifty thousand persons; the twenty-four thousand three hundred and thirty-four stores, warehouses, etc., being stocked with goods of immense value; to protect this large number of people, and their property interests, there are about twenty-five hundred members of the police force, and seven hundred and ninety-two firemen with their apparatus. Standing sentinel over this large number of people and their immense property holdings, prepared to bring the forces of the Police and Fire Bureaus and their apparatus, to their rescue when in danger, are but nine hundred and thirty-two fire signal boxes, of which fifty-eight are on private property, and inside of buildings. There is no doubt of the efficiency of our Fire and Police Bureaus, nor does a doubt exist as to the efficiency of the fire signal service as far as established, but scattered over so much territory and in protection of so large a number of properties with their valuable contents, the number is exceedingly small. In case of fire, all agree that a few minutes gained in reaching a fire during its incipiency is worth hours after it has obtained headway; to gain these few minutes and to enable an alarm to be sent in at the earliest possible moment after its discovery, there should be more signal stations placed on the highways.

The necessity for the placing of fire signal boxes in the Asylums, Hospitals, Homes and Schools, has in no sense been relieved; the demand on us for this service is so pressing from other directions, that, owing to a lack of funds to secure the instruments, these institutions have in a measure to be neglected.

A reference to the "Summary of the Operations of the Fire Alarm Telegraph," shows there to have been six false alarms of fire given with malicious intent. When it is considered that a "False" alarm of fire is attended by the same apparatus and number of men as for a genuine one, subjecting men and apparatus to the well-known dangers incident to answering an alarm, and that while a false alarm is being answered, the service of the companies attending may be badly needed elsewhere, the subject becomes one of serious consideration, an dthe Act of February 22, 1865, wherein such an action is considered a misdemeanor, punishable with a fine and imprisonment, should be rigidly enforced on any one upon whom the act of pulling a false alarm of fire can be proven. There are several cases in which the boxes have been broken with bricks or cobble stones in the hands of parties strongly suspected, but who, when arrested and tried, secured a favorable verdict. The case against these parties was so strong that it seemed a matter of impossibility for them to obtain a verdict in their favor, but such was the fact.

The breaking of a fire alarm box, while it may not be of any event in a financial sense, is a serious matter in so far that the works of the box may be damaged to such an extent that it would be impossible to transmit an alarm from it; and at the same time the circuit upon which the box is placed may be opened, thus preventing all othe boxes on it transmtiting an alarm if pulled.

Telephone.

The Municipal Telephone service grows larger with each succeeding year, to-day having eight hundred and eighty-nine setts of telephones under our supervision; every service in the Bureau, every Bureau in the Department and every Dpartment or office in the City are in some way connected with this system; the services to which they are connected, while varied, are kept in order to the satisfaction of all concerned.

By Ordinance of December 24, 1879, The Bell Telephone Company of Philadelphia was authorized to run its wires through and over the streets in this City; under that authority the Bell Company constructed a system of overhead housetop wires for telephone service. This method of running their wires was adopted from choice, they particularly stating when the ordinance was under consideration they did not want to erect poles, preferring to run all their wires over housetops.

Under the Ordinance of January 12, 1888, they were granted permission by Councils, to lay and maintain underground electrical conduits, and to erect terminal poles within certain prescribed limits. This service was to be completed within five years from the above date, viz: January 12, 1893; about this time the Trades League and other organizations were endeavoring to have the telephone rates reduced and on the application to Councils of the Bell Company for further underground privileges, the question was carried to those bodies and so strongly urged that all ordinances reported to Councils for their action were negatived.

Since the above date, Councils have refused to grant them further permission to place conduits underground.

During 1895, application was made to the Board of Highway Supervisors for permission to extend their conduits, but that body, uncertain as to its authority in the matter, referred it to the City Solicitor, who rendered an opinion favorable to the Bell Company, and their plans were approved and permits for opening the streets issued; under this ruling, considerable conduit was laid.

On the completion of this work, application was made to the Chief of the Electrical Bureau for permission to erect terminal poles. The Chief declined to issue such permit, as the Ordinance of April 18, 1863, provides that "it shall not be lawful for any telegraph company, person or persons, to erect any pole or poles in any of the streets, lanes or alleys of the City of Philadelphia, unless authorized by Councils," hence the Chief's refusal to issue the permits asked for. The question of issuing the permits was then taken to the Director of Public Safety, and thence to the Mayor, each of whom declined to authorize its issue.

Failing to obtain the desired permission to erect the poles asked from the authorities, recourse was had to the Court, who, after hearing argument in the case, gave judgment in favor of the Bell Company. An appeal from this judgment was taken to the Supreme Court, whose decision is awaited.

Trolley.

While no extension of any considerable length is to be recorded as having been built by the Union Traction Company, they have been hard at work in an endeavor to regain the position they held before the fire destroyed the power house at Thirteenth and Mt. Vernon streets, on March 3d.

Overhead wire, where worn by the trolley wheels, have been renewed; much of their bonding renewed; new and larger return cables have been placed underground, and all curves and crossings have been rebonded.

The danger to travel on the South street bridge that existed from the use of the old flat rail, from which escaping current shocked horses, etc., has been removed by the introduction of a nine-inch girder rail, each joint being well bonded and joined to two auxiliary wires and connected to a 1,000,000 C. M. return cable.

A new draw-bridge has been built crossing Frankford creek on Bridge street, Bridesburg, the draw being worked by a motor supplied with current from the trolley wire.

Through the unfortunate destruction by fire of the power house at Thirteenth and Mt. Vernon streets, the vast underground system of cables connecting the various stations and railway divisions of the Union Traction Company, were thrown out of service for a considerable time; when connections had been completed with the power houses of their system, it was found that the lead sheathing of the City and other cables laid underground, were strongly and positively effected. Steps were immediately taken by the Company by the introduction of large negative returns and by the City in bonding to them, to prevent the destruction of the lead sheathing of the cables from these vagrant currents. Action in the matter had been taken so quickly and the results of the introduction of the returns and the bonding so decidedly effective, that no material damage was done to the cables.

The company has been continually at work during the year introducing new negative returns, new bonds, etc., to prevent leakage of current and to obtain as nearly as possible, a return to their source, by means of their own service, of all currents, generated by them.

Seeking a more perfect system of bonding, they have introduced a cast welded bond to the rails on a number of the streets traversed by them, but I fear the venture has not proved successful.

Credit should be given the officers of the railway company for their courtesy and willingness to fulfill the wishes and requests of the officials with whom they are brought in contact; seeming to be desirous to co-operate with this Bureau with but one end in view, that—to maintain their service at the highest point of efficiency.

Electric Lighting.

Philadelphia leads the cities of the Country in many of its municipal affairs; but in none, perhaps, so decidedly as that of the lighting of the highways. There are few who have systematized their methods of illumination as has been done here, and none that will produce so many well lit streets; there are seven thousand one hundred and nineteen electric lamps located in our streets; by judicious arrangement they serve to the comfort and security of all. Demands are constantly made for the extension of the electric lighting service to the parts of the City not lighted, but the indications are that but few new lights will be erected during 1898, owing to the failure of Councils to appropriate funds for the purpose.

Many electric arc lamps placed over the footwalk for the use of private parties, or the illumination of their store fronts, were found to be so low that persons carrying umbrellas in passing were liable to come in contact with them, in one instance with fatal result. A regulation of the Bureau called for a height of not less than eight feet six inches from the sidewalk, but in many instances they were found as low as six feet. All electric light companies were notified to raise their private lamps to the regulation height. This notification was immediately complied with.

Under the ordinance granting the various electric light companies privileges, thirty-seven engine and police stations have been wired and lit free, two thousand three hundred and twelve lamps are used in these installations.

The Kensington Electric Company, formerly the Frankford Avenue Merchants' Electric Light Company, were given permission by the Ordinance of December 1, 1892, to furnish electric lights, etc., in the territory comprised within the Eighteenth and Thirty-first Wards. Among other provisions it was required of them that they "wire, furnish the lamps, and light all City buildings occupied as police and fire stations within the said territory, in the vicinity of their overhead and underground electrical conductors, free of charge to the City; such wiring shall be completed and light supplied within ninety days after notice shall have been given by the Department of Public Safety." There are to-day six buildings within the above mentioned territory that should be provided with light under their ordinance, viz: the Eleventh District Police Station, the Twenty-sixth District Police Station, the Eleventh District Patrol Station, the Twenty-sixth District Patrol Station, the Tenth District Patrol Station, and Engine No. 6; of his number, they are lighting the Eleventh District Police Station and Engine No. 6.

The Eleventh District Patrol Station and the Twenty-sixth District Police and Patrol Stations, they refuse to light, claiming that the buildings were not in existence nor used as police and fire stations at the time of the granting of their ordinance, and that they were only required to light such buildings as were erected at the time of the passage of their ordinance; and that the number of lamps located were excessive. They refuse to light the Tenth District Patrol Station on Frankford avenue, above Master street, on the grounds that their territory ends at the west house line of Frankford avenue, and as the property is built west of the west house line, they are not required to light it. Their construction of the terms of the ordinance and of the existing conditions to escape from the provisions of their ordinance, are foreign to any excuse ever offered to avoid conditions into which they entered willingly and knowingly, a proof of which is shown by a letter written by them, where notice was given to proceed to comply with the terms of their ordinance, in which they requested that, as a new station was about to be built to replace the old one, the order to wire and light the old Station House of the Twenty-sixth District be rescinded, as it would be unnecessary and expensive to the Company for the short time the building was to be used as a Police Station. This request was complied with and the order for the lighting of the old Station withdrawn.

To force compliance with the provisions of their ordinance and by reason of their repeated refusal to wire the Twenty-sixth District Police Station, their warrants for public lighting for the months of June, July, August and September, 1896, amounting to eleven thousand nine hundred and one (11,901) dollars and forty (40) cents, were withheld. Failing to secure their warrants for these months, the Kensington Company entered proceedings against the Director of the Department of Public Safety, in the Court of Common Pleas No. 4, asking for a writ of mandamus, requiring the Director to sign the above mentioned warrants. A writ of mandamus was awarded the Company by the Court, without prejudice to the right of the City of Philadelphia to enforce compliance with the ordinance of December 1, 1892, by proper proceedings. An appeal was taken, and the case carried to the Supreme Court of Pennsylvania, where it is now pending.

Reference was made in my last Report to the number of private parties running electric lighting plants, who had illegally run wires across the highways and were maintaining these installations without the authority of Councils. As stated in that report, a list of the location of these plants and the places they supply has been furnished the City Solicitor for his action. I have not heard as yet what action his Department has taken in the matter.

Commission of Electric Light Plant.

As the report of the Commission of three experts appointed under a resolution of Councils of April 15, 1896, to "Inquire into and make estimate of the cost of installing and maintaining a municipal electric light plant" is a matter of great interest to other municipalities and the electrical fraternity at large, I herewith submit all the data in the matter that it may form part of this report as information for others and as a future reference for the Department and Bureau.

On April 15, 1896, the following resolution authorizing the Director of the Department of Public Safety to procure a preliminary report and estimate from at least three experts of the cost of installing and maintaining a Municipal electric light plant was passed:

"*Resolved, by the Select and Common Councils of the City of Philadelphia*, That the Director of the Department of Public Safety is hereby authorized and directed to procure a preliminary report and estimate from at least three experts, one to be selected by the Mayor, one by Councils, and the two thus chosen to select the third, of the cost of installing and maintaining a municipal electric light plant to furnish current for arc lamps for municipal lighting and incidental expenses pertaining thereto. The cost of same not to exceed the sum of six hundred (600) dollars, to be taken from Item 13, in the annual appropriation to the Department of Public Safety (Electrical Bureau), for the year 1896, and that Joint Rule 41, of the Select and Common Councils be suspended in order to permit the Clerks of Councils to submit this resolution to the Mayor, for his approval or disapproval."

Mr. M. Richard Muckle, Jr., was named by the Mayor, and Mr. J. J. DeKinder by Councils.

Owing to the absence of these two commissioners from this country at different times, it was not until April, 1897, that they met for the purpose of selecting the third member of the Commission, when A. E. Vogt, of Altoona, Pa., was chosen, and accepted the appointment.

Acting on your (the Director of Public Safety's) instructions to us in our interview early in May, 1897, we consulted with David R. Walker, Esq., Chief of the Electrical Bureau, and all the information and data relating to the subject in the possession of that Department was placed at our disposal.

We find that the electric lighting of the streets of Philadelphia, as done by the various private corporations, is satisfactory to the Department, and to the public generally so far as the service is concerned, and that fines are imposed for failure of service. Including those contracted for for the year 1897, there are in use at present 7,119—2,000 candle power arc lamps, furnished by nine companies, each power station being generally located centrally in the District lighted from it.

This grand total of 7,119 lamps includes 50 lamps paid for by the Girard Estate, and 83 lamps furnished by the various companies without charge to the City, called "free" lamps. These lamps are distributed in the several wards and localities, as follows:

City Electric Lighting.

Ward.	Total 1896.	New 1897.	Total 1897.	Free Lamps.
First	190	26	216	5
Second	137	19	156	1
Third	138	18	156	
Fourth	133	20	153	
Fifth	170	23	193	(Inc. 25 G. Est.)
Sixth	157	13	170	(Inc. 25 G. Est.)
Seventh	167	18	185	
Eighth	159	19	178	
Ninth	149	9	158	
Tenth	126	25	151	
Eleventh	111	12	123	
Twelfth	112	15	127	
Thirteenth	107	9	116	
Fourteenth	139	33	172	
Fifteenth	225	21	246	
Sixteenth	137	8	145	
Seventeenth	131	20	151	
Eighteenth	161	19	180	5
Nineteenth	209	24	233	7
Twentieth	206	35	241	1
Twenty-first	144	20	164	
Twenty-second	194	25	219	
Twenty-third	192	20	212	
Twenty-fourth	199	14	213	1
Twenty-fifth	144	23	167	2
Twenty-sixth	156	22	178	
Twenty-seventh	259	42	301	2
Twenty-eighth	117	10	127	3
Twenty-ninth	184	19	203	11
Thirtieth	177	20	197	2
Thirty-first	159	30	189	8
Thirty-second	221	18	239	7
Thirty-third	136	20	156	5
Thirty-fourth	156	20	176	7

City Electric Lighting—Continued.

Ward.	Total 1896.	New 1897.	Total 1897.	Free Lamps
Thirty-fifth	311	20	331	5
Thirty-sixth	157	20	177	2
Thirty-seventh	102	17	119	2
Thirty-eighth	147	12	159	
South Street Bridge	6	....	6	
Chestnut Street Bridge	4	....	4	
Market Street Bridge	4	....	4	
Callowhill Street Bridge	13	....	13	
Girard Avenue Bridge	4	....	4	3
Walnut Street Bridge	21	....	21	
Falls Bridge	7	....	7	
Total	6,278		7,036	83

	Free Lamps.
Diamond Company	10
Kensington Company	10
Manufacturers' Company	10
Powelton Company	10
Southern Company	10
West End Company	15
Suburban Company	5
Northern Company	10
Peoples Traction Company (Girard Avenue Bridge)	3
Total free lamps.	83

On Overhead Circuts	6,332
On Underground Circuits	704
Free Lamps	83
Grand total	7,119

The price paid per lamp per night by the City under this year's contract with the companies averages thirty-three and a third (33.3) cents.

Fines amounting to over three thousand (3,000) dollars were imposed in 1896, for failure or partial failure of lamps to burn.

After a thorough and exhaustive survey of the field, a study of the location of the several stations now supplying current for City lamps, and having in mind the needs of power stations in the direction of cheap water supply, coal handling and delivery, and drainage, we have fixed on the following scheme for proposed location of stations.

Station "A."

Located in the neighborhood of Gray's Ferry bridge, on the east bank of the Schuylkill river.

This station to supply light for the following wards:

First to Fifteenth, inclusive; Twenty-fourth, Twenty-sixth, Twenty-seventh, Twenty-ninth, Thirtieth, Thirty-fourth, Thirty-sixth, and the bridges forming the crossings of South street, Chestnut street, Market street, Callowhill street, Girard avenue and Walnut street, all now supplied with current for 4,035 lamps.

Station "B."

Located on the Delaware River bank, near foot of Otis street, to supply light for wards Nos. Sixteen, Seventeen, Eighteen, Nineteen, and Twenty, now having a total of 963 lamps.

Station "C."

Located at or near Lardner's Point, on the Delaware River bank, near the City's pumping station, and to supply light for Wards Nos. Twenty-three, Twenty-five, Thirty-five, Thirty-three, and Thirty-one, now having a total of 1,075 lamps.

Station "D."

Located on the east bank of the Schuylkill River, above City line, in Lower Manayunk, and to supply light for Wards Nos. Twenty-one, Twenty-two, Twenty-eight, Thirty-two, Thirty-seven, and Thirty-eight, and the Falls Bridge, now having a total of 1,046 lamps.

Chief Walker estimates that the ultimate requirements will be about 10,000 lamps, and from data presented by him showing the yearly increased demand for light in the different wards, his estimate appears to be reasonable and in keeping with the conditions.

For Station "A" we would advise an installation of 4,800 horse-power and for each of the Stations "B," "C," and "D," 1,200 horse power. The steam engine unit in each case to be 1,200 horse-power, four such units to be located in Station "A." When the demand for light increases so as to require more capacity than 8,400 horse-power and up to 10,000 lamps, one additional unit of 1,200 horse-power may be placed in each of Stations "B," "C," and "D," which will provide for the necessary relay of power.

Plants located at these four points will best serve the territory now lighted, and by adding to their capacity will provide properly for the growth and increase of the lighting service of the City.

With all the plants for electric street lighting under municipal ownership no fast and rigid line of demarcation between the districts lighted by each plant is either necessary or desirable, so that if the light requirements of one district should increase more rapidly up to the capacity of its plant than that of a neighboring district, some of the lighting circuits of both may be rearranged and the plant of the latter may be made to help out the deficiency in the former. By such readustments of distribution of current any considerable additions to either of the plants may be postponed for a number of years.

The ground required for each of these power plants, to provide for power house and yard, should have a frontage of at least 150 feet on the river, and extend back from same at least 300 feet, care being taken in the selection of the property so as to get good average bottom for foundations for machinery, buildings and chimneys.

For Station "A" should be secured a somewhat larger plot of ground, where should be located a separate building for the general offices, store room and stables.

The buildings should be absolutely fire proof, of brick and iron construction throughout, and so located with respect to surrounding buildings as to be least liable to damage from fire from without. The power houses to be rectangular in plan, the engines and shafting to be located on one side and the boilers, pumps, etc., on the other side of a heavy fire wall. Over the boiler room should be placed bins for coal storage, with conveyors and elevators for handling the coal, while beneath the boiler furnaces should be located a tunnel for track and cars for handling the ashes from the pits. The ashes to be carried to the elevator, thence to a bin from which they are discharged into car or boat, as may be most convenient. Over the engine room, on a heavy brick and iron floor, the dynamos, switchboards, store rooms, and offices should be located as well as repair shops.

The cost to the City of these four pieces of ground located as described should not exceed forty thousand (40,000) dollars for Station "A," and thirty thousand (30,000) dollars for each of the other three stations. If they could not be secured by private purchase, condemnation proceedings would secure them at a cost probably not exceeding the above prices.

The building required for Station "A" would be about 200 feet long and about 80 feet wide, and would cost complete, with all foundations for machinery and with coal storage bins overhead, eighty thousand (80,000) dollars.

The building for Stations "B," "C," and "D," would be about 100 feet long and about 60 feet wide, and would cost, with foundations for machinery and with overhead coal bins, thirty-seven thousand (37,000) dollars each.

The buildings for office and store room purposes and the one for stable and coach house, would cost fourteen thousand (14,000) dollars and six thousand eight hundred and twenty-five (6,825) dollars, respectively.

The character and design of all these buildings to be in keeping with the style now generally accepted and followed by this municipality in the erection of its power houses for water supply and buildings for police and fire service.

The selection of motive power for a plant of this size involves so many questions of engineering and fitness for the work to be done that it was only after an exhaustive study of the requirements of arc lighting stations, that we finally fixed on compound engines, to be run condensing.

We would advise the use of horizontal cross compound engines for this purpose, having one high pressure cylinder and one low pressure cylinder and the necessary condensing apparatus. Engines of this type are built by a number of makers throughout the country; are all of about the same design, weight and workmanship, and competitive prices always obtain. This is about the simplest form of high grade engine which can be secured without getting into the triple and quadruple expansion machines, which frequently secure to the owners a higher water economy at the expense of other costs, such as attendance, interest on investment, and repairs.

In Station "A" four of these engines should be placed, each one to be belted to a heavy jack shaft placed on the same floor and supported on heavy piers. These jack shafts transmit the power through belts to the generators on the floor above, each generator being driven by its individual belt, controlled by a belt tightener.

Outfits similar to this are to be seen at the station of the Brush Company, at Twentieth and Johnson streets, although with engines of simple type and smaller in size than those recommended.

On the floor above the engines, should be placed, for each unit of 1,200 horse-power, four or eight arc light generators, having a total capacity of 540 K. W. On this floor should also be placed the instruments for testing and the switchboards, of a capacity to suit the circuits carried out from the machines.

For boilers, we would recommend the use of the water tube type, and in this station we would place an outfit of 3,000 boiler horse-power, divided into six batteries of two 250 horse-power each. These six batteries would face each other in groups of three, and would be provided with two steel chimneys, each 125 feet high and 8 feet in diameter. The chimneys to be set up on suitable foundations, and to be self supporting and to be lined for one-third their height with brick. The boiler plant to be fitted complete with damper regulators, feed pumps, etc., and the engines to be connected to suitable jet condensers, taking their water from the river. Coal conveying apparatus should be furnished which will take the coal from barges on the river front, or from cars at the railroad siding, the coal to be taken to the overhead bins for the boilers.

For Stations "B," "C," and "D," one unit of 1,200 horse-power engine, jack shaft, 540 K. W. generator capacity, switchboards, instruments, etc., should be used, and 1,000 horse-power of boilers made up of two batteries of two 250 horse-power each, and one steel stack 125 feet high, 6 feet 6 inches in diameter, similar to that described for Station "A."

In the matter of handling and distributing the current for the lighting proper, we have considered fully the question of the use of overhead and underground service, the partial use of both systems by some companies, and by the City, and have made our estimates on both systems, leaving it to the proper authorities to determine which shall be used.

The continued recommendation of Councils for the placing of wires underground, and the removal of poles, would make it advisable to use the underground system in the business portion of the City, if not throughout. If the wires are placed on poles, a neat wooden pole should be used, similar to those which are used in the suburbs; these are 30 feet long, planted 5 feet in the ground, 9 inches by 9 inches at the butt, and 7 inches by 7 inches at the top, cut true octagon and neatly cōned. These poles should be made of long leaf Southern pine, and should be painted with two coats of lead paint in linseed oil. These poles can be furnished with cross-arms for pins and insulators as required. The lamps would be placed on the top of these poles, supported on suitable pole irons. The wire used should be provided with weather-proof insulation, and for mechanical as well as electrical reasons should be no smaller than No. 4, B. & S. Gauge. The cost of these wooden poles placed in the ground and provided with two, 2 pin cross-arms, with pins and insulators, is six (6) dollars and seventy-eight (78) cents each, which covers the replacing of sidewalks, pavements, awnings and piping, which may be damaged in the setting of the poles.

For the 7,119 lamps now in use there would be required 20,951 wooden poles and 1,294.62 miles of No. 4 wire.

If the wires were placed underground in conduits and iron poles used to support the lamps by the use of mast-arms, as is now used on Broad street, and in some other sections by the Electrical Bureau, but 7,119 iron poles would be required, one for each lamp, with mastarms averaging 15 feet in length, and the cable would be placed in underground conduit similar to that now used by the City. The cost of iron poles with 15 foot mastarms, set in the ground is thirty-four (34) dollars and ten (10) cents each, and the cost of the electric light cable for underground purposes of No. 4 B. & S. Gauge painted, braided and lead covered, on the basis of this year's bids to the City, would be eleven and one-half (11½) cents per foot. The underground conduit made up of a single duct 4 inches by 4 inches outside, 2½ inches opening, of creosoted wood will cost one thousand (1,000) dollars per mile placed in position in the ground, with the pavements repaired, and includes manholes at proper intervals for drawing in the cables.

Where the iron pole line is used with underground conduit, the lamps would be hung from the mastarms. The commercial 2,000 candle power double carbon arc lamp, fitted for suspension from mastarms, would cost twenty-five (25) dollars each, and if fitted with pole iron to be placed on the top of wooden poles, twenty-eight (28) dollars each.

Against maintenance we have charged, first, interest at four (4) per cent. per annum on the total cost of plants; second, repairs to each class of property and machinery to keep same in running order; third, depreciation of each class of property and machinery to replace same when required; fourth, insurance on real estate and machinery in buildings against fire at one (1) per cent.; accident to boilers and to surrounding property from boiler explosions at fifteen (15) dollars per boiler per year, and against accident to employees at two thousand seven hundred and fifty (2,750) dollars per one hundred thousand (100,000) dollars wages account per annum; fifth, salaries, wages, coal, carbons and all supplies.

On the estimate for salaries, wages, coal and all supplies we have taken the rates now prevailing and paid by the City government for similar services and materials.

We append our estimate in Table No. 1 with an estimate in Table No. 2 of the additional cost of lamp per night and per year if the City plant were liable to the expenses incidental to the operation of a private corporation doing the same business and receiving for its product the sums charged to maintenance. We have made no charge against maintenance for a sinking fund for redemption of loan made to pay for plant.

TABLE NO. 1.

Cost of Plant with Overhead System.

Total cost of installation, including one lot of ground at $40,000 and three lots of ground at $30,000 each; four power-houses, with all machinery and appurtenances and chimneys; one building for offices, store-room purposes and stables; wharves, coal-storage bins, coal-handling appliances, etc., etc.; overhead line construction with wooden poles, wires, arc lamps, etc.; services and expenditures of engineer in designing and superintending the work	$1,562,731 00

Maintenance with Overhead System.

Interest on cost of plant at 4 per cent	$ 62,509 24
Repairs and depreciation	102,048 50
Insurance, accident, fire and boiler	12,732 00
Salaries, wages, coal, carbons and all supplies	406,375 00
	$583,664 74

$81.986 per lamp per year.
.2246 per lamp per night.

Cost of Plant with Underground System.

Total cost of installation, including one lot of ground at $40,000 and three lots of ground at $30,000 each; four power-houses, with all machinery and appurtenances and chimneys; one building for offices, store-room purposes and stables; wharves, coal-storage bins, coal-handling appliances, etc , etc.; underground construction with conduits, lead-covered cables, iron poles with mast-arms and lamps; services of engineers in designing and superintending construction	$3,475,867 00

Maintenance with Underground System.

Interest on cost of plant at 4 per cent	$ 139,034 68
Repairs and depreciation	174,068 50
Insurance, accident, fire and boiler	12,732 00
Salaries, wages, coal, carbons and all supplies	406,375 00
	$732,210 18

$102.852 per lamp per year.
.2817 per lamp per night.

TABLE NO. 2.

Cost of Plant with Overhead System.

The bonus on capital stock of one-fourth of 1 per cent., payable during the first year of organization, would increase the investment by about $3,925, making the capital stock in round numbers	$1,570,000 00

Maintenance with Overhead System.

State tax 5 mills on capital stock	$ 7,850 00
8 mills tax on gross receipts of $585,000	4,680 00
Municipal real estate tax on two-thirds value of buildings	2,405 00
	$14,935 00

$2.09 per lamp per year.
.0057 per lamp per night.

Cost of Plant with Underground System.

Investment increased by $8,750, to provide for bonus of one-fourth of 1 per cent., making capital stock in round numbers	$3,500,000 00

Maintenance with Underground System.

State tax 5 mills on capital stock	$17,500 00
8 mills tax on gross receipts of $733,000	5,864 00
Municipal tax on real estate	2,405 00
	$25,769 00

$3.6199 per lamp per year.
.0099 per lamp per night.

We would call attention to the uniform courtesy extended to the members of your Commission by the officials in charge of the various City Bureaus, whom we consulted for information regarding the operation of their respective Departments; and wish to thank the managements of the several lighting companies, whose power stations were thrown open for our inspection; and, also, the manufacturers of machinery, apparatus, and supplies, who so cheerfully gave us market prices and figures necessary for this report.

Respectfully submitted,

M. R. MUCKLE, Jr.,
J. J. DeKINDER,
A. E. VOGT.

Conduits (*City*).

The appropriations for 1897 permitted the purchase and installation of twenty-eight thousand six hundred and thirty-two feet of conduit, aggregating two hundred and three thousand five hundred and ninety-one feet of duct, as follows:

Three thousand nine hundred feet of six duct Williamsport tube on the west side of Thirty-third street, from Columbia avenue to Ridge avenue, with eight manholes; two thousand and sixteen feet of six duct tube on the east side of Ridge avenue, between Diamond and Thirty-third streets, with six manholes; one thousand nine hundred and fifty-one feet of nine duct tubes on Ridge avenue, from Thirty-third street to Lehigh avenue, with six manholes; six thousand eight hundred feet of six duct tubes on the south side of Diamond street, under the footwalk, between Broad and Front streets, with twenty-three manholes; three hundred and ten feet of three duct tubes on the south side of Diamond street, between Broad street and Park avenue; five thousand eight hundred and fifty feet of six duct tubes on the south side of Lehigh avenue, from Kensington avenue to Front street, with eighteen manholes; eight hundred and fifty feet of twelve duct Valentine conduit on the east side of Broad street, between the north side of Christian street and the south side of Washington avenue, with five manholes; four thousand six hundred and fifty feet of nine duct Valentine conduit, on the east side of Broad street, between the south side of Washington avenue and the south side of Passyunk avenue, with nineteen manholes; twenty-seven feet of six duct crossing Chestnut street on the east side of Broad street, between the southeast and the northeast corners, into the Girard Building; four hundred and ninety-six feet of six duct tubes on the west side of Broad street, under footwalk, between the southwest corner of Poplar street and the southwest corner of Girard avenue, with three manholes; nine hundred feet of nine duct tubes on the east side of Fifth street, from in front of the Bourse Building to Walnut street, with five manholes; forty-seven feet of two duct tubes across Market street east of Front street, connecting City conduit on the north side with the Edison Company on the south side; eighty-three feet of twenty-seven duct on the north side of Callowhill street, east to the west side of Broad street (for Subway); nine feet of two duct tubes, connecting the City manholes with the Bell manhole at Germantown avenue and Diamond street; fifteen feet of two duct tubes connecting the City manhole with the Manufacturers' Electric Company manhole at Germantown avenue and Diamond street; eleven feet of two duct tubes connecting the City manhole with the Bell manhole, at Front and Diamond streets; fifty feet of two duct tubes connecting the City manhole with the Bell manhole at Richmond street and Lehigh avenue; twenty-four feet of two duct tubes, connecting the City manhole with the Bell manhole at Lehigh avenue and Cedar street; forty-eight feet of two duct tubes, connecting the City manhole with the Bell Telephone Co.'s manhole at Frankford and Lehigh avenues; sixty-one feet of two duct tubes, connecting the City manhole with the Manufacturers' manhole at Frankford and Lehigh avenues; thirty-one feet of two duct tubes, connecting the City manhole with the Electric Traction manhole at Kensington and Lehigh avenues ; fifteen feet of four duct tubes, connecting the City manhole with the Merchants' Electric Light Company's manhole at Kensington and Lehigh avenues; eight feet of one duct tube, connecting the City manholes with the Penn Co.'s manhole at Fifth and Chestnut streets; twenty-five feet of two duct tubes, connecting the City manhole to the Bell manhole at Fifth and Chestnut streets; nineteen feet of two duct tubes, connecting the City manhole with the Drexel Building; twenty-one feet of one duct tube, connecting the City manhole with the Penn Electric Light Company's manhole at Fifth and Walnut streets; forty-four feet of four duct tubes on the west side of Thirty-third street at Diamond street; forty feet of two duct tubes (2½ inches) between the Edison and the Long Distance manholes at Front and Arch streets; eight feet of two duct tubes (2½ inches) between the Brush and the Long Distance manholes at Tenth and Arch streets; ten feet one duct tube (2½ inches) between the Brush and Long Distance manholes at Seventh and Arch streets; fifty feet of one duct tube (2½ inches) across the street at Chester and Vine streets; eight feet of one duct tube (2½ inches) between the City and the Long Distance manholes at Seventh and Market streets; twenty feet of two duct tubes (2½ inches) between the Brush and the Long Distance manholes at Fourth and Chestnut streets; twenty feet two duct tubes (2½ inches) between the Brush and Long Distance manholes at Third and Callowhill streets; ten feet of one duct tube (2½ inches) between the Brush and the Long Distance manholes at Fourth and Spruce streets; thirty-two feet of two duct tubes (2½ inches) between the City and Edison manholes at Delaware avenue and Walnut street.

The twenty-inch iron pipe laid in 1886 from the Subway at the northeast corner of the City Hall to the northeast corner and the southeast corner of Juniper and Filbert streets for drawing cables into or out of the City Hall was found to be inconvenient and unsuitable for the purpose, and conduits were laid to replace it as follows:

Eighty feet of sixty ducts from subway to the centre manhole; thirty feet of thirty-six ducts from the centre manhole to the manhole at the southeast corner of Juniper and Filbert streets; eighteen feet of eighteen ducts from the centre manhole to the manhole at the northwest corner of Juniper and Filbert streets; forty-five feet of eighteen ducts from the centre manhole to the manhole at the northeast corner of Juniper and Filbert streets.

The following table will show the cost per foot per duct of the conduit laid during 1897, including manholes and the restoration of the streets completed and ready for the cables:

	Per Foot per Duct.	Per Mile per duct.
Thirty-third street, Columbia avenue to Ridge avenue, 6 ducts	14.96	789.88
Ridge avenue, Diamond to Thirty-third street, 6 ducts	16.47	869.62
Ridge avenue, Thirty-third street to Lehigh avenue, 9 ducts	13.06	689.57
Broad street, Poplar street to Girard avenue, 6 ducts	19.09	
Diamond street, Broad to Front streets, 6 ducts	18.86	995.80
Lehigh avenue, Kensington avenue to Richmond street, 6 ducts	16.51	871.73
Broad street, Christian street to Washington avenue, 12 ducts	17.41	
Broad street, Washington avenue to Passyunk avenue, 9 ducts	23.22	1,226.02
Fifth street, Bourse Building to Walnut street, 9 ducts	22.47	

Five thousand feet of four duct conduit on the east side of Broad street, between Juniatta avenue and Ruscombe street, that had been laid by the Philadelphia Traction Company and abandoned by them in 1896, was presented to the City in that year.

Rental of Ducts in City Conduits.

An Ordinance of Councils authorizing the Department to lease such ducts as the City may have to spare, has enabled several companies, whose overhead service did not warrant their laying conduits for themselves, to take advantage of its terms and place their services beneath the surface of the street. The names of the companies, with the amount paid by each, will be found below:

American Telegraph and Telephone Company:

One duct in the City conduit on the east side of Broad street, from the north side of Chestnut street to the south side of Washington avenue, a distance of four thousand eight hundred and seventy feet.............. $300.00

Philadelphia, Reading and Pottsville Telegraph Company:

One duct in the City conduit on the north side of Market street, from the first manhole east of Twelfth street to the manhole in front of the Ridgway House, east of Water street, a distance of four thousand nine hundred and eighty-four feet; also, one duct in the City conduit on Second street, from Market to Berks street, a distance of ten thousand seven hundred and seventy feet, a total distance of fifteen thousand seven hundred and fifty-four feet or two and nine hundred and eighty-three thousandths miles, ... $750.00

Postal Telegraph Cable Company:

One duct in the City conduit on Second street, from Market to Diamond streets (eleven thousand eight hundred and sixty-two feet); one duct on Market street, from Second to Tenth streets (three thousand seven hundred and thirty-three feet); three ducts on Tenth street, Marble alley to Cameronian Court (two thousand one hundred and forty-five feet); two ducts on Third street, Market to south of Chestnut street (one thousand two hundred and seventy-two feet); and one duct on Fifth street, from Market street to the Bourse Building (two hundred and eighty-two feet), in all, nineteen thousand two hundred and ninety-four feet) $950.00

Postal Telegraph Cable Company:

One duct in City conduit on the north side of Market street, from No. 9 Market street, via Juniper, Filbert and Merrick streets, to Powelton avenue, a distance of (in all) three miles and three thousand seven hundred and sixty-eight feet, ... $950.00

Bell Telephone Company of Philadelphia:

One duct in the City conduit on Broad street, between Filbert street and Germantown avenue, three miles and four thousand six hundred and sixty-seven feet.. $950.00

One duct in City conduit on Ridge avenue, between Vine street and Columbia avenue, one mile and four thousand seven hundred and ninety-one feet 550.00

Total.......................$1,500.00

Pennsylvania Railroad Company:

One duct in City conduit on Market street, from the Delaware river, via Juniper, Filbert and Merrick streets to Fifteenth street; one duct on Fifth street, from Market street to the Bourse Building; one duct on Walnut street, from Front street to No. 8 Walnut street; one duct on Front street, from Market street to Dock street (Girard

Estate leased to the City) in all, one mile and four thousand seven hundred and thirty feet.......... $550.00

Western Union Telegraph Company:

Four ducts in the City conduits on Market street, from Water street to the east end of bridge, and on Tenth street, from Market street to south of Chestnut street (two miles and one thousand four hundred and seventy-eight feet each), ... $3,000.00

One duct from the east end of bridge (Market street bridge), to Thirtieth street, one thousand one hundred and fifty-one feet.

One duct on Market street, from Thirtieth to Thirty-second streets, one thousand four hundred and forty-four feet; one duct on Walnut street, from Front street to Delaware avenue, two hundred and eighty feet; one duct on Fifth street, from Market street to the Bourse Building, two hundred and eighty-two feet; two ducts on Third street, from Market street to south of Chestnut street, six hundred and thirty-six feet each, one thousand two hundred and seventy-two feet... 300.00

$3,300.00

Rental of Wires in City Cables.

Pennsylvania Railroad Company:

Nine (9) miles of conductor in the cable laid in City conduits on Thirteenth street, from Chestnut to Market street; on Chestnut street, from Thirteenth to Broad street, and on Ninth street, from Market to Chestnut street, ... $90.00

Western Union Telegraph Company:

One (1) mile and four thousand six hundred and twenty

(4,620) feet of conductor in the cable laid in City conduits from the Reading Terminal along Market and Tenth streets to the office of the Western Union Telegraph Company, southwest corner of Tenth and Chestnut streets, $20.00

Philadelphia, Reading and Pottsville Telegraph Company:

Five (5) miles and three thousand three hundred (3,300) feet of conductor in the cable laid in City conduits from the Reading Terminal along Market and Tenth streets to the office of the Western Union Telegraph Company, southwest corner of Tenth and Chestnut streets.. $60.00

Other Companies' Conduits.

The American Telegraph and Telephone Company have laid during the year five hundred and thirty-six (536) feet of conduit as follows:

On the west side of South Delaware avenue, from the north side of Ton alley to the west side of South Delaware avenue, opposite Pier No. 3.

Across South Delaware avenue, from the west side of South Delaware avenue to the southwest side, Pier No. 3.

The Bell Telephone Company of Philadelphia have laid during the year six hundred and eighty-eight (688) feet of conduit, as follows:

On Merchant street, from the rear of No. 406 Market street to the Bourse Building.

On South Tenth street, from Chant street to the Mutual Life Insurance Company's building.

On South Ninth street, from Sansom street to the Burd Building.

On Kelly street, from Chant street to the Penn Mutual Building.

On South Fifth street, from the manhole on Fifth street to the Fred. Brown Building.

On South Fifteenth street, from the manhole on Fifteenth street to the Lippman Building; from the Lippman Building to the Rothschild Building.

On Sansom street, from the manhole on Sansom street to the Baptist Bd. Building.

On Juniper street, from Sansom street to the Witherspoon Building.

On North Eleventh street, from Filbert street to the Bell Telephone Company's Building.

On Ridge avenue, from the manhole at No. 1836 Ridge avenue to the Bell Telephone Company's Building.

The Columbia Electric Light Company of Philadelphia have laid during the year two thousand six hundred and thirty (2,630) feet of conduit, as follows:

On the west side of Eighteenth street, from the south side of Columbia avenue to the south side of Girard avenue.

The Edison Electric Light Company have laid during the year twelve thousand three hundred and forty-eight (12,348) feet of conduit, as follows:

On the east side of Sixth street, from the north side of Arch street to the south side of Race street.

On the east side of Second street, from the south side of Walnut street to the south side of Dock street.

On the south side of Dock street, from the east side of Second street to the west side of Mattis street.

On the west side of Mattis street, from the south side of Dock street to the south side of Spruce street.

On the south side of Spruce street, from the west side of Mattis street to the east side of Front street.

On the east side of Front street, from the south side of Spruce street to the south side of Walnut street.

On the west side of Third street, from the south side of Arch street to the south side of Callowhill street.

On the west side of Eleventh street, from the north side of Arch street to No. 106.

On the west side of Ninth street, from the south side of Walnut street to the south side of Locust street.

On the north side of Cuthbert street, from the east side of Fifteenth street to the west side of Broad street.

On the south side of South Penn Square, from the east side of Fifteenth street to the west side of Broad street.

On the west side of Broad street, from the south side of South Penn Square to the north side of Chestnut street.

On the south side of Locust street, from the east side of Eighteenth street to the west side of Seventeenth street.

On the south side of Locust street, from the west side of Seventeenth street to the east side of Fifteenth street.

On the east side of Sixteenth street, from the south side of Locust street to the south side of Walnut street.

On the south side of Market street, from the east side of Nineteenth street to the west side of Twenty-first street.

On the south side of Market street, from the east side of Nineteenth street to the west side of Twenty-first street.

On the west side of Broad street, from the north side of Cuthbert street to the south side of Callowhill street.

On the east side of Ninth street, from the north side of Chestnut street to the north side of Market street.

On the north side of Goodwin's alley, from the east side of Ninth street to the east side of Billington's Court.

On Ninth street, from the northwest to the northeast corner of Sansom street.

On the west side of Eighth street, from the north side of Market street to the north side of Arch street.

The Electric Traction Company have laid during the year two thousand five hundred and eighteen (2,518) feet of conduit, as follows:

On Brown street, from Fifth to Sixth street.

On Brown street, from Sixth to Eleventh street.

The Pennsylvania Heat, Light and Power Company have laid during the present year ten thousand one hundred and nineteen (10,119) feet of conduit, as follows:

On the east side of Eighteenth street, from the south side of Vine street to the north side of Spring Garden street.

On the south side of Buttonwood street, from the east side of Nineteenth street to the west side of Seventeenth street.

On the north side of Spring Garden street, from the east side of Eighteenth street to the east side of Nineteenth street.

On the north side of Spring Garden street, from the east side of Nineteenth street to the east side of Twentieth street.

On the north side of Spring Garden street, from the east side of Eighteenth street to the west side of Seventeenth street.

On the east side of Nineteenth street, from the north side of Spring Garden street to the south south of Mt. Vernon street.

On the east side of Nineteenth street, from the south side of Mt. Vernon street to the north side of Wallace street.

On the east side of Nineteenth street, from the north side of Wallace street to the south side of Fairmount avenue.

On the east side of Nineteenth street, across Fairmount avenue.

On the east side of Nineteenth street, from the north side of Fairmount avenue to the south side of Ginnodo street.

On the south side of Ginnodo street, from the east side of Nineteenth street to Ridge avenue.

On the east side of Ridge avenue, from the south side of Ginnodo street to the west side of Eighteenth street.

On the south side of Ginnodo street across Ridge avenue.

On the west side of Eighteenth street, from Ridge avenue to the south side of Girard avenue.

On the north side of Green street, from the east side of Twentieth street to the west side of Fifteenth street.

On the north side of Wallace street, from the west side of Eighteenth street to the east side of Nineteenth street.

The Peoples' Traction Company have laid during the year eight thousand and sixty-nine (8,069) feet of conduit, as follows:

On Fairmount avenue, from Eighth to Twelfth street.

On Fairmount avenue, from Twelfth street to Pennsylvania avenue.

The Philadelphia Standard Telephone and Telegraph Company have laid during the year one thousand six hundred and thirty-five (1,635) feet of conduit, as follows:

On the north side of Market street, from Hudson to Third street.

On the north side of Market street, from Third to Second street.

On the north side of Market street, from Second to Letitia street.

On the north side of Market street, from Letitia to Front street.

On the north side of Market street, from Front to Water street.

On the east side of Ninth street, south of Market street.

The Pneumatic Transit Company have laid during the year sixteen thousand one hundred and twenty-six (16,126) feet of conduit, as follows:

Location.	Kind of Material.	No. of Ducts.	Diameter of Ducts.	Length in feet.
Connecting with main Post Office from a point on Chestnut street about 60 feet west of Ninth street; thence along the south side of Chestnut street and connecting with the former sub-post office 200 feet east of Fourth st...	Iron....................	2	5⅞ inches.	2,549
Same as above..	Wood creosoted...	1	2½ "	2,549
On the east side of Fourth street, from Chestnut to Ransted street................	Iron....................	2	5⅞ "	224
Same as above..	Wood creosoted...	1	2½ "	224
On the south side of Ransted street, from Fourth street to a point in Ransted street 120 feet west of Fourth, connecting with the Bourse...............	Iron....................	2	5⅞ "	120
Same as above..	Wood creosoted...	1	2½ "	120
On the south side of Filbert street, connecting with the Pennsylvania R. R. 40 feet west of Fifteenth street to west side of Tenth street............................	Iron....................	2	7⅞ "	2,465
Same as above..	Wood creosoted...	1	2½ "	2,465
Same as above..	Iron....................	1	2 "	2,465
From the south side of Filbert street along the west side of Tenth street to Chant street..	Iron............. ...	2	7⅞ "	645
Same as above..	Wood creosoted...	1	2½ "	645
Same as above..	Iron....................	1	2 "	645
Chant street to main Post Office building..	Iron....................	2	7⅞ "	270
Same as above..	Wood creosoted...	1	2½ "	270
Same as above..	Iron.............	2	2 "	270
West side Uber street, from Columbia avenue north 100 feet.........................	Iron....................	2	5⅞ "	100
Same as above..	Creosoted wood...	1	2½ "	100

Conduits, Total Returns.

The returns made to this Bureau by the various companies, authorized by Councils to maintain underground electrical structures, together with those laid by the City, shows there has been placed underground two million three hundred and seventy-nine thousand three hundred and eighty-eight (2,379,388) feet of conduit, an increase of thirty-one thousand three hundred and ninety-three (31,-

393) feet over 1896, representing an aggregate of seventeen million six hundred and seventy-five thousand three hundred and six (17,675,306) feet of duct, an increase of twenty-seven thousand three hundred and five (27,305) feet, of which the City owns two hundred and fifty-four thousand seven hundred and ninety-two (254,792) feet of conduit, an increase of thirty-three thousand six hundred and thirty-two (33,632) feet or one million seven hundred and sixty-six thousand three hundred and sixty-six (1,766,366) feet of duct, an increase of two hundred and twenty-three thousand five hundred and ninety-one (223,591) feet.

Cables (City) for Electric Lighting.

Nine thousand seven (9,700) feet of No. 4 B. & S. Gauge, lead encased, braided and painted electric light cable has been laid on the east side of Broad street, between Cuthbert street and the south side of Poplar street, and on the west side of Broad street, from the south side of Poplar street to the south side of Girard avenue, with thirty (30) thirty (30) foot iron poles, and thirty (30) fifteen (15) foot mastarms; the lamps were connected to this cable and current turned on May 14th, on the evening before the unveiling of the Washington Monument.

Additional thirty (30) foot posts and fifteen (15) foot mastarms were placed on underground cables, as follows:

The northwest corner of Broad and Diamond streets; northeast corner of Newkirk and Diamond streets; south side of Columbia avenue, east of Twenty-second street, requiring about two hundred and twenty-five (225) feet of cable, a total of nine thousand nine hundred and twenty-five (9,925) feet laid during the year.

There has been erected by the City and connected with overhead wires, belonging to the Electric Light Companies, the following iron poles:

Forty-five (45) thirty (30) foot iron poles with fifteen (15) foot mastarms.

Seven (7) thirty (30) foot iron poles with fifteen (15) foot mastarms.

Five (5) thirty (30) foot iron poles with eighteen (18) foot mastarms.

Eight (8) thirty (30) foot iron poles with twelve (12) foot mastarms.

Six (6) thirty (30) foot iron poles without mastarms.

Seven (7) twenty-five (25) foot iron poles.

On account of radius curbs, the iron electric light posts on City underground cables at Warnock and Locust streets, and Twenty-third and Arch streets were removed. The thirty (30) foot pole on Columbia avenue west of Twenty-first street was moved east from its original position to one opposite Norwood street.

Cables (City) for Telegraph and Telephone.

Excepting the leads into engine and station houses and up cable poles, but little telegraph and telephone cable has been laid, the time and attention of the Bureau having been given principally to connecting up that which was placed underground during 1896, and connecting to them the instruments in the engine and station houses and the fire signal and police signal boxes, between Callowhill and South streets and the Delaware river and Twenty-third street. A quantity of old cable that had been drawn from the ducts for various reasons and accumulated for a number of years, was returned to the makers, and for a very small sum the lead sheathing was removed, the cores re-insulated and a new lead sheathing and braiding put on. A portion of this cable has been drawn into the conduits on the Delaware river front, and connected up for fire and police purposes.

New cables for the extension of our underground services are on hand and will be placed in the ducts and connected up early in 1898. Telegraph and telephone cables have been laid during 1897, as follows:

300 feet of 10 conductor, composed of 6 No. 16 and 4 No. 18 B. & S. Gauge, on Tenth street, from Market street to Marble alley.

368 feet of 10 conductor, composed of 6 No. 16 and 4 No. 18 B. & S. Gauge, in Penn ducts on Eighth street, from Market to Jayne street.

3,364 feet 24 conductor, composed of 14 No. 16 and 10 No. 18 B. & S. Gauge, on Delaware avenue, from Walnut to Vine street.

350 feet of 24 conductor, composed of 14 No. 16 and 10 No. 18 B. & S. Gauge, on Vine street, from Front street to Delaware avenue.

50 feet, 3 conductor, composed of No. 16 B. & S. Gauge, into Hestonville, Mantua and Fairmount Passenger Railway Company's depot, at Forty-third street and Lancaster avenue, connecting their alarm gong on underground service.

60 feet, 16 conductor, composed of 8 No. 16 and 8 No. 18 B. & S. Gauge, laid into Fire Headquarters, Juniper and Race streets.

45 feet, 16 conductor, composed of 8 No. 16 and 8 No. 18 B. & S. Gauge, laid into the Insurance Patrol, at Fifth and Arch streets.

90 feet, 16 conductor, composed of 8 No. 16 and 8 No. 18 B. & S. Gauge, laid into Engine No. 1, at Nineteenth and South streets.

80 feet, 42 conductor, composed of 21 No. 16 and 21 No. 18 B. & S. Gauge, from the cellar to the operating room at the Twenty-first District.

120 feet, 10 conductor, composed of 6 No. 16 and 4 No. 18 B. & S. Gauge, from Engine No. 41 to the Twenty-ninth District Station House at Sixty-first and Thompson streets.

40 feet, 10 conductor, composed of all No. 16 B. & S. Gauge, between Bridesburg Police Station and Engine No. 33.

60 feet, 16 conductor, composed of 8 No. 16 and 8 No. 18 B. & S. Gauge, between the Brush and the Long Distance manholes at Fourth and Arch streets.

25 feet, 16 conductor, composed of 8 No. 16 and 8 No. 18 B. & S. Gauge, between the City and Long Distance manholes at Front and Market streets.

50 feet, 16 conductor, composed of 8 No. 16 and 8 No. 18 B. & S. Gauge, between the Edison and Long Distance manholes at Front and Arch streets.

55 feet, 16 conductor, composed of 8 No. 16 and 8 No. 18 B. & S. Gauge, between the Long Distance manholes at Front and Walnut streets.

20 feet, 42 conductor, composed of 20 No. 16 and 22 No. 18 B. & S. Gauge, between the City and Long Distance manholes at Twentieth and Market streets.

18 feet, 42 conductor, composed of 20 No. 16 and 22 No. 18 B. & S. Gauge, between the City and Brush manholes at Broad and Chestnut streets.

20 feet, 30 conductor, composed of 18 No. 16 and 12 No. 18 B. & S. Gauge, between the City and Long Distance manholes at Lancaster avenue and Market street.

90 feet, 10 conductor, composed of 6 No. 16 and 4 No. 18 B. & S. Gauge, between the Brush and Long Distance manholes at Tenth and Arch streets.

80 feet, 10 conductor, composed of 6 No. 16 and 4 No. 18 B. & S. Gauge, between the Brush and Long Distance manholes at Seventh and Arch streets.

70 feet, 4 conductor, composed of 2 No. 16 and 2 No. 18 B. & S. Gauge, across Vine street at Chester street.

110 feet, 31 conductor, composed of 15 No. 16 and 16 No. 18 B. & S. Gauge, between the City and Long Distance manholes at Seventh and Market streets.

60 feet, 10 conductor, No. 16 B. & S. Gauge, between the Long Distance and Brush manholes at Seventh and Chestnut streets.

60 feet, 10 conductor, No. 18 B. & S. Gauge, between the Long Distance and Brush manholes at Seventh and Chestnut streets.

100 feet, 4 conductor, composed of 2 No. 16 and 2 No. 18 B. & S. Gauge, between the City manhole at Eleventh and Market streets and the cellar of the Market Street National Bank.

285 feet, 4 conductor, composed of 2 No. 16 and 2 No. 18 B. & S. Gauge, between the manhole at Eighth and Jayne streets and the cellar of the Commonwealth Trust Company.

446 feet, 16 conductor, composed of 8 No. 16 and 8 No. 18 B. & S. Gauge, on Filbert street, between Tenth and Eleventh streets.

732 feet, 42 conductor, composed of 20 No. 16 and 22 No. 18 B. & S. Gauge, on Vine street, from Tenth to Chester street.

343 feet, 22 conductor, composed of 12 No. 16 and 10 No. 18 B. & S. Gauge, on Market street, from Front to Delaware avenue.

100 feet, 3 conductor, composed of No. 16 B. & S. Gauge, from the manhole into the freight station at Delaware avenue and Walnut street.

3,315 feet, 3 conductor, composed of No. 16 B. & S. Gauge, was used in connecting to the underground cables, the ninety-three (93) signal boxes located between Vine and South streets and the Delaware river and Twenty-third street. The private fire signal box of the Pennsylvania Railroad Company at Walnut street wharf, has been connected by a short length of 3 conductor cable.

Six hundred and sixty (660) feet of four (4) conductor cable, composed of 2 No. 16 and 2 No. 18 B. & S. Gauge, was required to connect the fifteen (15) patrol boxes of the Sixth District Police Signal System, to the underground cables and two hundred and fifty (250) feet of the same cable to connect the sixteen (16) patrol boxes of the Fourth District Police Signal System.

One thousand six hundred and fifty (1,650) feet of thirty-five (35) conductor, composed of 27 No. 16 and 8 No. 18 B. & S. Gauge, has been laid in the City conduits on Market street, east of Twelfth street to Tenth street, and on Tenth street, between Market street and south of the south side of Chestnut street, connecting the Reading Terminal with the Western Union Telegraph office.

A new length of cable was substituted for a piece that had been damaged, on Broad street, between Moore and Mifflin streets.

Forty-six (46) junction boxes were used in connecting up cables.

Cables Laid for the Temporary use of the Philadelphia, Reading and Pottsville Telegraph Company.

Owing to the construction of the Subway along Pennsylvania avenue it became necessary to remove a line of poles and wires belonging to the Philadelphia, Reading and Pottsville Telegraph Company, that no interruptions should occur to them in the operations of their telegraph service.

Fifteen thousand six hundred and forty-nine (15,649) feet of forty-three (43) conductor cable, composed of 23 No. 16 and 20 No. 18 B. & S. Gauge, was purchased by the Bureau of Surveys and laid, at the expense of that Bureau, by this Bureau, for the temporary use of the Philadelphia, Reading and Pottsville Telegraph Company, as follows:

In the City conduit, from Ridge avenue and Willow street to Ridge avenue and Spring Garden street, thence to Twenty-third street, thence to Fairmount avenue, thence to Twenty-sixth street, thence to Girard avenue, and thence in the conduits of the American Telegraph and Telephone Company to Thirty-first street, where it enters the office of the Reading Telegraph Company; from Willow street this cable is carried on hangers under the iron structure of the Railway Company, into the Terminal house at the Collowhill street end. Four poles served with cables as outlets have been placed as follows:

Sixteenth and Spring Garden streets, 40 conductors, 22 No. 16 and 18 No. 18 B. & S.

Twentieth and Spring Garden streets, 40 conductors, 22 No. 16 and 18 No. 18 B. & S.

Twenty-third and Spring Garden streets, 40 conductors, 22 No. 16 and 18 No. 18 B. & S.

Twenty-sixth and Perot streets, 14 conductors, 4 No. 16 and 10 No. 18.

Seven junction boxes have been located in this cable, as follows:

Ridge avenue and Willow street, Ridge avenue and Spring Garden street, Broad and Spring Garden streets, Sixteenth and Spring Garden streets, Twentieth and Spring Garden streets, Twenty-third and Spring Garden streets, and Twenty-sixth and Perot streets.

Overhead cable used to connect the Philadelphia, Reading and Pottsville Telegraph Company with underground cable:

675 feet, 30 conductor, composed of 16 No. 16 and 14 No. 18 B. & S. Gauge, on Sixteenth street, from Spring Garden to Pennsylvania avenue.

785 feet, 14 conductor, composed of 4 No. 16 and 10 No. 18 B. & S. Gauge, on Twentieth street, between Spring Garden street and Pennsylvania avenue.

Cable terminal poles were located as follows:

Second and Race streets, 50 feet, 30 conductor, 16 No. 16and 14 No. 18 B. & S. Gauge.

Thirty-seventh and Market streets, 78 feet, 16 conductor, 4 No. 16 and 12 No. 18 B. & S. Gauge.

Forty-fourth street and Lancaster avenue, 250 feet, 20 conductor, 10 No. 16 and 10 No. 18 B. & S. Gauge.

Sixty-first and Thompson streets, 120 feet, 31 conductor, 15 No. 16 and 16 No. 18 B. & S. Gauge.

Fortieth and Market streets, 75 feet, 10 conductor, No. 16 B. & S. Gauge.

Twenty-third and South streets, 65 feet, 31 conductor, 15 No. 16 and 16 No. 18 B. & S. Gauge.

Park and Lehigh avenues, 121 feet, 40 conductor, 24 No. 16 and 16 No. 18 B. & S. Gauge.

Frankford and Girard avenues, 100 feet, 40 conductor, 22 No. 16 and 18 No. 18 B. & S. Gauge.

Twentieth and Walnut streets, 75 feet, 16 conductor, 8 No. 16 and 8 No. 18 B. & S. Gauge.

Eleventh and South streets, 65 feet, 16 conductor, 8 No. 16 and 8 No. 18 B. & S. Gauge.

Eighteenth and Callowhill streets, 68 feet, 16 conductor, 8 No. 16 and 8 No. 18 B. & S. Gauge.

Eighth and South streets, 65 feet, 16 conductor, 8 No. 16 and 8 No. 18 B. & S. Gauge.

Sixteenth and Spring Garden streets, 75 feet, 40 conductor, 22 No 16 and 18 No. 18 B. & S. Gauge.

Twentieth and Spring Garden streets, 106 feet, 40 conductor, 22 No. 16 and 18 No. 18 B. & S. Gauge.

Twenty-third and Spring Garden streets, 100 feet, 40 conductor, 22 No. 16 and 18 No. 18 B. & S. Gauge.

Twenty-sixth and Perot streets, 100 feet, 14 conductor, 4 No. 16 and 10 No. 18 B. & S. Gauge.

Second and Callowhill streets, 80 feet, 16 conductor, 8 No. 16 and 8 No. 18 B. & S. Gauge.

Delaware avenue and Chestnut street, 135 feet, 10 conductor, 6 No. 16 and 4 No. 18 B. & S. Gauge.

A new cable and cable-box was placed on the pole at Juniper and Cuthbert streets.

The Police Signal and Telephone Service of the Fourth District with sixteen (16) boxes and the Sixth District with fifteen (15) boxes, have been placed entirely on underground circuits.

The new "Central" police telegraph circuit, composed of the Third, Fourth, Fifth, Sixth, Eighth, Sub Ninth, Nineteenth and Twentieth Districts, has been placed underground and is working with perfect satisfaction.

Four new fire signal box circuits, viz: Nos. 21, 22, 23, and 24, composed entirely of underground wires, have been completed and the fire boxes within the territory lying between the Callowhill and South streets and the Delaware river and Twenty-third streets placed on them. Several boxes on Market street, west of Thirtieth street, and on Lancaster avenue northwest of Thirty-second street, have been placed on underground wires.

Fire signal box circuits, numbered 3 and 18, have been placed underground on Callowhill street, between Broad and Twenty-third streets, and on Fairmount avenue, between Broad and Twenty-third streets.

The gongs and fire telephone instruments in all the engine and truck houses, together with Fire Headquarters, included within the territory bounded by Callowhill, South, Broad and Twenty-third streets, have been placed on underground circuits.

The telephone circuits between the Sixth and Twentieth Districts and the Fifth and Nineteenth Districts, have been placed underground. The route of No. 6 fire telepone and No. 2 alarm and the talking wire, has been changed from Woodland avenue to Market street, from Thirty-second to Thirty-seventh street.

To improve their telephone service, at the request of the Chief of the Bureau of Water, a pair of underground wires has been completed to Broad street and Lehigh avenue, with a bridge at Broad and Girard avenue, to Front street, connecting with a pair of new copper wires with Otis street wharf, Sixth and Lehigh avenue, Lardner's Point and Wentz Farm Reservoir. Also, a pair of underground wires to Broad street and Germantown avenue, connecting with new copper overhead leads to Germantown, Mt. Airy and Chestnut Hill Stations; and the residence of Mr. Hand, Superintendent of the Bureau of Water, via underground wires on Broad street and Columbia avenue to Eighteenth street, with the main office of the Bureau of Water, greatly benefiting the service; the overhead portion was constructed at the expense of the Bureau of Water.

To facilitate the testing out of wires in the Chestnut street cable, a new junction box was placed in the manhole at Juniper and Chestnut streets, City conduit.

The circuits leading to the residence of Police Surgeon Andrews, and to the office of Magistrate Jermon, were continued from Broad and Lombard streets underground to Eleventh and South streets.

The residence of the Secretary of the Department of Charities and Correction and the Sergeant-at-Arms of Common Council, have been connected by telephone with the City Hall, by underground wires.

The telephone circuit between the City Hall and the Pennsylvania Hospital has been extended by underground cables from Broad and Lombard streets to Eighth and South streets.

In the City Hall, cables have been laid into the rooms of the Department of Charities and Correction, the Building Inspectors and the Boiler Inspectors on the third floor; the City Solicitor's offices on the fourth floor; the room provided for the Bureau of Water on the seventh floor; into all the rooms on the north and south sides of the first floor west of the north entrance, and into all the rooms on the east and west sides of the first floor, north of the west entrance. To reach the first floor, it was necessary to lay all the cables in the cellar and carry them up the walls of the basement rooms, into the rooms above. The multiplicity of cables laid in the floors of City Hall, are continually subject to interference by workmen cutting into them, necessitating constant supervision.

During the unveiling of the Washington Monument on May 15th, the underground wires of the Bureau were used, between the Monument and the City Hall, and Market street wharf for signalling and telephone purposes.

Fire box posts located at Broad and South streets, and at Broad street and Germantown avenue, were run into and broken by runaway teams; no harm was done the instruments.

Brush Electric Light Company's Cables.

The Brush Electric Light Company have placed on their underground cable on Spruce street, from Second to Twentieth streets, on Vine street, from Second to Twentieth street, and on Twentieth street, from Vine to Spruce streets:

Thirty 30 foot poles (iron) with 15 foot mastarms.
Thirteen 30 foot iron poles, with 12 foot mastarms.
three 25 foot iron poles, without mastarms.

They have also erected five twenty-five (25) foot iron poles with twelve (12) foot mastarms in Washington Square; four (4) twenty-five (25) foot iron poles in Independence Square; five (5) twenty-five (25) foot iron poles in Franklin Square and connected the same on their underground cable.

They have also connected with their Walnut street cable, a lamp on the thirty-foot iron post and mastarm on Walnut street, between Fifteenth and Broad streets, and one on a thirty-foot iron post and a fifteen foot mastarm at Nineteenth and Walnut streets; also, one on their Arch street cable on a twenty-five foot iron post in front of No. 618 Arch street. These poles and arms are the property of the City.

Police Telegraph.

Recognizing the value of this arm of the City's electrical service, to these the citizens of our City, means are constantly sought for the attainment of but one end, that, perfection; as funds are provided by appropriation for the betterment of the services under our care, the police telegraph obtains its proportion, its yearly increase in business showing how necessary the care and attention devoted to it may be. There was a time when the operator and his instrument was the last thought of in a new building, or remodelling an old one for police purposes; but latterly a change has been effected and they are provided with apartments and conveniences more suited to their importance.

The instruments at the main station of the Twenty-first District, Thirty-seventh and Woodland avenue, were moved from their old room to one newly fitted up; those at the old station in the basement at Holmesburg were moved to a comfortably fitted-up room in the school house that is being remodeled as a police station, and the operating room at the Nineteenth District at Eighth and Lombard streets was altered and enlarged, thus providing quarters more suitable to the important services operated in them.

Through the gradual addition of new police stations during the past few years, the several circuits of the Police Telegraph System were burdened each with more stations than was beneficial for their proper management. It has been our aim for some time past to so prepare our underground and overhead services that, these circuits may be relieved. During the rearrangement and placing underground of the various systems in the centre of the City, a circuit was prepared almost entirely underground for the new Central Police wire, including the Third, Fourth, Fifth, Sixth, Eighth, Ninth sub, Nineteenth and Twentieth Districts, and one termed "East," whose circuit included the Seventh, Tenth, Eleventh, Eighteenth, and Twenty-sixth Districts. The changes made necessitated the addition of two additional police instruments at the Central Station.

Police Signal and Telephone.

A reference to the tables showing the work done by this system during the year 1897, would possibly warrant no further comment on the subject; but the importance of the subject of renewing, touched on last year, still remains; with the small appropriation given us little can be done but keep pace with the demands for new locations made by the various districts, nothing being done to replace the old pattern instruments by those of a more recent date.

In keeping with our desire to keep every service under our control at the top notch of efficiency, two more districts, the Fourth and Sixth, have been equipped with the four wire system and all underground; this, with the Twentieth District gives us three districts where services are at as high a point of efficiency as the science of today will permit of.

Three of the outlying districts, viz: the Twenty-second, Twenty-fifth and the Twenty-ninth have been equipped with the overhead four wire system, the results attained being exceedingly gratifying; the telephone service, heretofore useless owing to induced currents, becoming a practical agent for the transmission of speech between the policemen on their beats and the police station.

Thirty-four (34) stations were added during the year, as follows: The Third District, three (3); Fourth District, two (2); Fifth District, three (3); Sixth District, two (2); Twelfth District, one (1); Fifteenth District, three (3); Sixteenth District, two (2); Seventeenth District, two (2); Eighteenth District, one (1); Nineteenth District, four (4); Twenty-second District, two (2); Twenty-third District, one (1); Twenty-fifth District, two (2); Twenty-sixth District, two (2); Twenty-eighth District, one (1); Thirtieth District, three (3).

Much trouble was caused by the insufficient contact between the telephone hook and screw. This was overcome by the placing of a light steel spring in permanent contact between the screw and hook; since this change was made no trouble has been experienced in that direction.

All transmitters located in the police stations have been improved by replacing the old Blake instrument with a granular button, adding much to the volume of the instrument.

The instruments at the Nineteenth and Twenty-first Districts were moved into newly equipped rooms. During the Musical Festival at Saengerfest Hall, Eleventh and York streets, police patrol instruments were placed at each of the York and Cumberland streets entrances. Recognizing how desirable a direct connection with the Bureou of Police might be and to better the facilities provided for their watchment in case of trouble, the firm of Conyers, Button & Company have contracted for, and we placed in their factory, at Walnut lane east of Germantown avenue, at the usual yearly rental, a police patrol signal box, connected with the Fourteenth District Patrol.

The Fourteenth District Patrol covers a large territory and when in trouble requires the services of a lineman for a considerable time to clear it,—to facilitate the finding of trouble on this circuit, the wires have been run into the police station at Olney for test. The patrol box formerly located at the railroad station at Bustleton was removed next to the drug store in a building provided for police purposes. The patrol wall boxes in a number of districts were given two coats of paint.

Patrol.	Police District.	Private Boxes.	Total Boxes.
2	Second,	...	13
3	Third,	1	16
3	Fourth,	1	17
7	Seventh,	...	16
7	Eighth,	...	16
9	Ninth,	1	15
10	Tenth,	...	12
11	Eleventh,	...	14
12	Twelfth,	...	20
13	Thirteenth,	...	16
14	Fourteenth,	3	39
15	Fifteenth,	...	15
15	Twenty-seventh,	...	15
16	Sixteenth,	...	16
17	Seventeenth,	...	20
17	First,	1	13
18	Eighteenth,	...	25
19	Nineteenth,	1	15
19	Fifth,	3	17
20	Twentieth,	...	10
20	Sixth,	2	15
21	Twenty-first,	2	28
22	Twenty-second,	...	21
22	Twenty-eighth,	...	15
23	Twenty-third,	1	24
24	Twenty-fourth,	...	17
25	Twenty-fifth,	...	25
26	Twenty-sixth,	...	17
29	Twenty-ninth,	...	18
30	Thirtieth,	...	26
		16	546

Fire Signal and Telephone System.

The improvement begun during 1896 has been carried forward during 1897; two circuits, entirely underground, have been completed, connecting all engine companies between Callowhill and South streets and Delaware avenue and Twenty-third street, and Fire Headquarters, with the Central; the benefits derived from this are freedom from interruption by storms and a perfect system of telephone communication.

Engine Company No. 17 is located in the rear of the Twentieth District Police Station ; to prevent accident should they be called out during an alarm of fire, it is necessary that a police officer be placed at the gateway leading to the engine house to keep the street clear of wagons. To insure the police station receiving the alarm, an instrument has been placed in the police station on the fire signal circuit, thus providing two ways for them to receive an alarm, enabling them to promptly post an officer at the gateway to prevent accidents.

Fire telephone circuits No. 2, No. 3 and No. 10, the number of whose companies were reduced by their being placed on underground wires, were temporarily bunched together, forming circuit No. 3.

Fire Alarm System.

The continued and careful supervision of the lines and instruments comprised in this system has secured for it a place that cannot be excelled by any similar service in the country. An important movement was made during the year, in placing the instruments in the engine and truck companies, located between Callowhill and South streets and the Delaware river and Twenty-third street, on circuits composed entirely of underground wires, securing for them immunity from the troubles incidental to storms, falling wires, fire, etc. New alarm gongs have been placed in the residences of Assistant Engineers Graham and Smith; and at the expense of the Hestonville, Mantua and Fairmount Passenger Railway Company, new gongs have been placed in their office at Forty-third street and Lancaster avenue, and at their generating station, Twenty-fifth and Callowhill streets.

Fire Signal System.

Considering that this is one of, if not the most important service under our control, it cannot be wondered at, that the instruments and circuits included in it are the object of much solicitude on our part. Ever on the alert to improve it we have taken every opportunity offered by the funds provided to improve and better it. From the amount appropriated for the year 1897, forty-four (44) boxes were connected, two hundred and seven (207) miles of iron and copper wire were placed in circuit, either for renewals or extensions; the number of instruments on many of the circuits reduced, and more than one hundred (100) placed on circuits, composed entirely of underground wires. The circuits of this system are subject to a constant series of tests and the batteries connected to them being daily subjected to volt and ammeter, twice during the year, a systematic inspection was made of each instrument and everything suggestive of trouble removed. In addition to this each inspector and lineman when out on trouble of any nature, calls the office from and pulls each box he may pass on his way.

Once each month, each signal box with a keyless door is examined, to provide against the possibility of the springs rusting or trouble of any kind arising, interfering with the opening of the door in case of necessity.

Three signal boxes were purchased by the Union Traction Company and placed, two at their station at Eighth and Dauphin streets and one at Kensington avenue and Cumberland street.

Four new circuits, composed entirely of underground wires, and numbered 21-22-23 and 24, were completed; these circuits jointly contain one hundred (100) signal boxes.

There are altogether one hundred and fifty-four (154) boxes on underground wires. Circuits Nos. 1-4-6-8-10 and 13 were rearranged and a number of boxes taken off each, No. 8 containing all boxes connected to private parties. Number 13 signal has been cut into the First, and Second Districts and Twenty-fifth Sub Police District, for convenience in testing and locating grounds and breaks; No. 16 signal has been cut into Olney Sub-Station for test.

During the session of the Singing Societies at the Saengerfest Hall, Eleventh and York streets, a fire box was placed at each of the entrances on York and Cumberland streets; as the building was of wood throughout, with many inflammable hangings, it was deemed advisable to provide against possible accident; fortunately there was no necessity for their use.

Each signal box has received a priming coating of red lead, and at the same time the works were cleaned and oiled. The iron posts on which the fire boxes at Broad and South streets and Broad street and Germantown avenue were placed were run into and broken by runaway teams.

The doors of signal boxes Nos. 793, 272, 563, were broken and pulled by parties who, being suspected, were arrested, but after trial were acquitted. Seven hundred and sixty-three (763) alarms of fire were given over the wires of this system during the year.

Telephones.

Each succeeding year adds its quota to the number of telephones used by the City, having under our care at this time, eight hundred and eighty-nine instruments. In maintaining this large number of instruments, much detail work is necessary as the synopsis of the work done during the year 1897 will show, viz:

Connections were made with the Electrical Bureau switchboard from the following offices: Office of the

Chief of the Bureau of Fire; residence of the Secretary of the Department of Public Safety; Sergeant-at-Arms of Common Council; Office of the Clerks of the Mayor; Office of the Assistant Director of Public Works; Cell Room of the Reserve Police; Stenographer of Common Council, No. 411, City Hall; room of the Draughtsmen of the Board of Highway Supervisors; Department of Charities and Correction, Room No. 395, City Hall; Mayor's new suite of rooms on the north side of City Hall; Chief Trautwine's office; Office of the Bureau of Surveys, Chestnut street wharf.

The stable wires between the Third and Fourth Districts; the Fifth and Nineteenth, and the Sixth and Twentieth Districts were placed underground and made metallic circuits.

The telephone service in the City Solicitor's office was, on the completion of their new rooms, moved from the fifth to the fourth floor. In continuance of the work done during 1896 for the Bureau of Water, we have completed three new circuits for the office of the Chief of the Bureau of Water to Lardner's Point, Otis street, Sixth and Lehigh avenue and Wentz Farm; to Germantown, Mount Airy and Chestnut Hill; and to Mr. Hand's residence.

A sett of 'phones were placed in the Twenty-sixth District stables, connecting with the operating room.

A sett of telephones, located at Brigade Headquarters, was changed from a graular button sett to a short Long Distance wall sett.

The telephone in the Board of Revision of Taxes was moved to their new offices, and the three speaking tube setts disconnected and returned to the local company.

The magneto on the tug "Stuart" was changed from series to bridged.

While the first floor of the old State House is being restored, the sett of telephones formerly located there has been moved to the second floor.

The sett of telephones formerly at the old station-house at Holmesburg was transferred to the new house on its completion.

On the completion of the new offices of the Boiler Inspection, the sett of telephones was transferred from the old rooms. Extension bells were located at the Twenty-fifth District Sub-Station and the residence of the Chief Clerk of Select Council.

During the unveiling of the Washington Monument, the Council stand and the reservoir were connected to the office, via underground wires by telephone. Five (5) additional trunks have been connected with our switchboard from the Bell Telephone Exchange, making twenty-five (25) in all.

Disconnected the sett of telephones from the office of the Assistant City Solicitor, No. 225 South Sixth street, and connected in new office at City Hall.

Trolley Construction.

During the year the trolley companies have not extended their lines to any extent, but have renewed considerable of what was already in position and in use, particularly curves and crossings, all of which have been bonded with an improved bond, channel pin bonding being prohibited. Particular attention being given to steam railway crossings, where it is impossible to keep bonds whole, on account of the pounding of the heavy trains passing over the rails.

In these cases two wires are buried under the crossing and connected to the straight girder rails at each side; this is in addition to the bonding of the crossings.

The old tram, or flat rail, which has caused so much trouble since the introduction of the trolley service and was a source of great danger to travel on the South street bridge, has all been removed and a nine-inch girder rail laid in its place, the entire length from the eastern approach, about Twenty-eighth street, to Thirty-second street, on the west, being bonded with two heavy auxiliary wires, connected to each joint, thence to a negative cable of 1,000,000 C. M. in conduit by connecting the four rails and the two auxiliary wires together. A heavy latch, working automatically, on each end of the draw, together with the manner in which the rails and auxiliary wires are connected with the returns, prevent the current from reaching any portion of the iron work of the bridge.

A new draw bridge has also been built, tracks laid and trolley wire erected on Bridge street, Bridesburg, crossing of the Frankford creek. The trolley wire is arranged similar to that on the South street bridge. When the draw is open the current is automatically cut off the trolley wire a certain distance on each side of the bridge. This prevents a car from approaching too close to an open draw, thereby avoiding the possibility of accident. No cars have passed over the bridge, the line at present ending at the east side. The draw on this bridge is operated by a seventeen horse-power general electric motor and controller, fed by the five hundred volt trolley current. It has been in use since April of this year and has proved satisfactory in every respect.

By request of the Superintendent of Bridges, the Chief of this Bureau has detailed an inspector to make a periodical inspection of the electrical work of this bridge. This has been done, and the motor and controller found to be in first class condition, kept so by one of the bridge watchmen.

On March 3d, the power-house of the Union Traction Company, Thirteenth and Mount Vernon streets, was almost totally destroyed by fire, which necessitated their running the other power-houses to their full capacity to feed all the lines formerly fed from Thirteenth and Mt. Vernon streets. While they had tie lines between their Delaware avenue, Beach street and Thirteenth and Mt. Vernon street power-houses for just such an emergency, it was found necessary to connect all negative cables together to return the current to its point of origination. This was done at about ninety intersections in different ways, some by new intersecting manholes, some by laying pipe between manholes and others by laying a heavy cable in a trench alongside of the rail and into the manhole and soldered to the intersecting negative cables.

In addition to the negative cables running parallel with the tracks and then to the various power-houses, they have two 1,000,000 C. M. cables, connected between Beach and Mt. Vernon streets, and four 1,000,000 C. M. cables connected between the Delaware avenue and Beach street power-houses. Tests made, by this Bureau, of the lead sheathing of its cables showed that even these were not sufficient, but while no additional returns were laid, the return service has been greatly benefitted by the addition of over two hundred (200) No. 0000 copper wires, between the rails and the negative cables already in use, as follows:

From rail to each manhole on Green street, between Eighth and Beach streets, with two 500,000 C. M. cables. Connected and under railroad crossing at Front street; the same on Fairmount avenue, between Eighth and Beach streets, with eight No. 0000 wires from track in front of Beach street power-house, direct to bus bar, each wire equal to 211.600 C. M. Also on Second street from rail to each manhole, between Walnut and Brown streets, with a 1,000,000 C. M. cable, connected and under railroad crossing at Willow street. Same on Chestnut and Walnut streets, betwen Third and Twenty-second streets.

Tests also showed there were not enough return wires in the neighborhood of Twenty-third and South streets. In this case a 1,000,000 C. M. cable was pulled in conduit on South street between Twenty-third street and power-house, at Twenty-seventh and South streets, which had the desired effect of relieving the earth of the escaped current and making the City cables safe from electrolytic action. They also pulled in and connected two No. 0000 wires, equal to 211,600 C. M. each, on Thirty-second street, between Columbia avenue and power-house, Thirty-second and Dauphin streets, and added a 1,000,000 C. M. cable between the Ridge avenue and Dauphin street tracks to same power-house, putting that neighborhood in good condition, in so far as action on underground cables is concerned.

There remains considerable tram, or flat rail, on two lines over which the Union Traction Company are running cars, that should be re-laid with a heavier rail, viz: Twenty-fifth street, between Fairmount avenue and Poplar street; Twenty-sixth street, between Girard avenue and Perot street; Perot street, between Twenty-fifth and Twenty-sixth streets; Dauphin street, between German-avenue and Marshall street; Marshall street, between Dauphin and York streets; Fairhill street, between York street and Indiana avenue; Indiana avenue, between Fairhill and Eighth streets; Eighth street, between Indiana avenue and York street.

These rails are entirely too light to carry the current passing over them, being laid on wooden stringers; the wood rots, the ends of the rail become loose and it is impossible to maintain the bonds; their being no return, except the rails on the above named streets, and the bonds being broken, naturally all the return current goes to the earth and damage to the underground structures takes place in a very short time.

The Chief of this Bureau has written a letter to the Vice President and General Manager of the Union Traction Company, in reference to the condition of these tracks, and requesting that the matter be given immediate attention. In answer they have assured the Chief that the matter would receive prompt attention. Since receiving the letter mentioned above, they have made arrangements to re-lay, wtih a heavy nine-inch rail, the track on Twenty-fifth street, between Fairmount avenue and Poplar street, which will be completed in a short time; the remainder will be put in good condition as rapidly as possible.

With a view of obtaining a better bond connection, the Union Traction Company have cast-welded the joints of their rails on the following streets: Chestnut and Walnut streets between Third and Twenty-second streets, nine inch rail; Sixteenth street, between Washington and Snyder avenue, six inch rail; Indiana avenue, between Broad and Fifteenth streets; Fifteenth street, between Indiana and Erie avenues, six inch rail; Chelton avenue, double track, between Pulaski and Stenton avenues; Pulaski avenue, between Chelton avenue and Rittenhouse street, and on Rittenhouse street between Pulaski avenue and car barn, four inch rail. While the welding of the joints of the rails makes a continuous solid rail, and no doubt are a good electrical conductor, the question arises, as the welding was all done during the month of August, when the weather was warm and the rails were expanded to their full extent, what will be the effect in cold weather, when contraction takes place? Up to the present time, the heavy nine inch rail joints do not show any defects, but the four inch rail being light, a number of the joints have pulled apart; these are to be re-welded.

The Union Traction Company has renewed twenty-nine (29) miles of trolley wire during the year, principally as follows: On Market street, Delaware avenue to Thirtieth street; Fourth street, Fairmount avenue to Germantown avenues; Eighth street, Fairmount avenue to Germantown avenues; Germantown avenue, Fourth street to Wyoming avenue; Ridge avenue, Susquehanna avenue to Green Lane, Manayunk ; Seventh, Franklin and other streets. The span wires on the Market street line between Delaware avenue and Sixty-third street were originally of No. 0 hard-drawn copper; these have all been renewed with 5-16 stranded iron cable, the copper wire not being reliable, it breaking by the slightest blow from the pole of a car.

The same company has also taken down 1½ miles of trolley wire from Orthodox street, between Frankford avenue and Richmond street, and Chestnut street west of Forty-fifth street. They have also taken down one hundred and sixty-nine (169) poles, one hundred and thirty (130) of which were on Orthodox street between Frankford avenue and Richmond street, thirty (30) on Chestnut street west of Forty-fifth street—balance scattered. The above streets were abandoned by the company; no tracks were laid on the same.

While all the other companies watch their lines equally as close, The Hestonville, Mantua & Fairmount Passenger Railway Company make a daily inspection of their entire lines, very little renewing has been done, except over curves and weak spots, which are cut out and new substituted.

The span wires on the lines of the Hestonville, Mantua & Fairmount Passenger Railway Company, the first to use stranded galvanized iron cables, began to show rust, although on examination the wire proved to be good; the company painted all of their span and pull-off wires, which not only improved the looks of the wires, but will preserve them as well.

All insulators of the Union Traction Company and the Hestonville, Mantua & Fairmount Passenger Railway Company, have been painted on several occasions, with a view of making them better able to withstand the effects of rain, an excellent precaution.

Constant inspections have been made by this Bureau of the overhead construction on all lines, and can safely say that the trolley lines in this city are constructed and maintained in a manner equal to the best.

The Union Traction Company and the Hestonville, Mantua & Fairmount Passenger Railway Company have both been put to considerable inconvenience and expense in making necessary changes along the line of the Pennsylvania Avenue Subway, so as not to interfere with the work as it progressed. The Union Traction Company having to move twenty-two (22), erect five (5) and abandon and take down ten (10) poles, besides the changing of trolley wires, etc.

The Hestonville, Mantua & Fairmount Passenger Railway Company moved five (5) and took down two (2) poles and abandoned one wire on Spring Garden street between Twenty-third and Twenty-fifth streets.

The Union Traction Company re-set one hundred and nine (109) poles; the Manayunk & Roxborough Incline Plane & Railway Company, seven (7); the Hestonville, Mantua & Fairmount Passenger Railway Company re-set ten (10) poles. Two hundred and ninety-five (295) poles were located on the Federal, Wharton and Ellsworth streets extension, and sixteen (16) scattering.

The fact that the iron trolley poles are nearly all insulated from the earth by their standing in concrete, and their having a great many head guy wires fastened to them from the various other lines, with a view of preventing a high potential current from being carried to the trolley pole through the guy, an order was issued by the Bureau to the various companies to have insulators placed in the guy wires, which is being done.

City Cables Bonded to Traction Returns.

Numerous tests of the lead sheathing of the city's underground cables have been made and wherever positive conditions existed connections have been made between the lead sheathing of the City cables and the returns of the Traction Company; a recent test of all our cables show them to be negative throughout.

Electric Lighting.

At the close of the year 1897 there were six thousand nine hundred and eighty-six (6,986) lamps maintained at public expense, an increase of seven hundred and fifty-eight (758) over 1896; fifty (50) by the Girard Estate; eighty (80) arc lighted free by the Electric Light Company under under ordinance; and three (3) free on Girard Avenue Bridge by the Peoples Traction Company, a total of seven thousand, one hundred and nineteen (7,119) lamps lighting the City's highways.

There are seven hundred and eight (708) lamps on the City's underground circuits, twenty-four (24) of which are furnished by the Girard Estate, and two hundred and thirty-two (232) on cables laid by the Electric Light Companies, a total on underground cables of nine hundred and forty (940), an increase of forty-seven (47) on City cables, and one hundred and fourteen (114) on cable owned by the Electric Lighting Companies.

There were ten thousand, seven hundred and eighty-six (10,786) lamps deducted from the bills of the various companies during the year for failing to comply with the provisions of their contract; at thirty-three and three tenths (33.3) cents, the average per lamp per night, three thousand, six hundred and eleven dollars and eighty-seven cents

($3,611.87) remains in the Treasury from these deductions.

From the tests taken during the year the amperage obtained was 9.5.

While not required to do so by ordinance, the Edison Electric Light Company are furnishing current to Fire Headquarters at Juniper and Race streets, for incandescent lighting; the Electrical Bureau supplied and ran three pieces of No. 4 cable to the southeast corner of Broad and Race streets, and from thence overhead to the Headquarters, with three leads of No. 4 underwriters wire, to complete the connection. A total of twenty-three (23) engine and police stations were wired for and lit by incandescent lamps during the year as follows:

Engine Co.	Lighted by.	Wired by.	No. of Lamps
No. 2	Northern	Northern	65
No. 15	Northern	Northern	38
No. 28	Manufacturers'	Manufacturers'	39
No. 34	West End	Electrical Bureau	46
No. 40	Powelton	Electrical Bureau	43
Truck "F"	Powelton	Electrical Bureau	50
Fire Headquarters	Edison	Electrical Bureau	55

	Lighted by.	Wired by.	No. of Lamps
Seventh District Police Station	Northern	Northern	95
Seventh District Patrol Station	Northern	Northern	12
Tenth District Station House	Northern	Northern	76
Fifteenth District Station House	Suburban	Electrical Bureau	85
Fifteenth District Patrol and Stable	Suburban	Electrical Bureau	37
Eighteenth District Station-house	Manufacturer's	Manufacturers'	95
Eighteenth District Patrol house	Manufacturers'	Manufacturers'	7
Twenty-first District Station-house	Powelton	Electrical Bureau	72
Twenty-first District Patrol and Stable	Powelton	Electrical Bureau	32
Twenty-first District Sub Station and Stable	Powelton	Electrical Bureau	53

Engine Co.	Lighted by.	Wired by.	No. of Lamps
Twenty-second District Station-house	Manufacturers'	Manufacturers'	65
Twenty-fourth District Station-house	Manufacturers'	Mannfacturers'	65
Holmesburg Station House	Suburbau	Electrical Bureau	27
Twelfth District Patrol House	Northern	Northern	20
Vernon Park Band Stand	Germantown	Electrical Bureau	14
Survey Bureau (Chestnut street Wharf)	Edison	Electrical Bureau	10
			1,101

A total of twenty-three (23) stations and 1,101 lamps. Of which the Electrical Bureau has wired twelve (12) houses for five hundred and twenty-four (524) lamps. The Manufacturers' Electric Company has wired and lighted five (5) houses with two hundred and seventy-one (271) lamps; the Northern Company six (6) houses with three hundred and six (306) lamps; the Edison Electric Light Company furnishes current for two (2) houses with sixty-five (65) lamps; the Germantown Electric Light Company furnishes current for one house with fourteen (14) lights; the Powelton Electric Company furnishes current for five (5) houses with two hundred and fifty (250) lights; the Suburban Electric Company furnishes current for three (3) houses with one hundred and forty-nine (149) lamps, and the West End Electric Company furnishes current for one (1) house with forty-six 46) lamps.

The following table will show the stations lit free with incandescent lights by the various electric light companies, under ordinance, viz:

Engine Company.	No. of Lamps.	Current furnished by.	Wired b
No. 2	65	Northern	Northern.
No. 6	39	Kensington	Kensington.
No. 7	38	Suburban	Electrical Bureau.
No. 14	43	Suburban	Electrical Bureau.
No. 15	38	Northern	Northern.
No. 16	85	Powelton	Electrical Bureau.
No. 19	21	Germantown	Germantown.
No. 21	50	Northern	Northern.
No. 27	43	Columbia	Columbia.
No. 28	39	Manufacturers'	Manufacturers'.
No. 29	151	Northern	Electrical Bureau.
No. 30	43	Manufacturers'	Manufacturers'.
No. 34	46	West End	Electrical Bureau.
No. 40	43	Powelton	Electrical Bureau.
No. 41	43	Powelton	Electrical Bureau.
No. 45	96	Diamond	Electrical Bureau.
No. 46	56	Southern	Electrical Bureau.
Truck "F"	50	Powelton	Electrical Bureau.
Fox Chase	40	Suburban	Owner.
Fire Headquarters	55	Edison	Electrical Bureau.
	1,084		

Police District.	No. of Lamps.	Current furnished by.	Wired by.
Seventh and Seventh Patrol	107	Northern	Northern.
Tenth	76	Northern	Northern.
Eleventh	63	Kensington	Kensington.
Twelfth and Twelfth Patrol	87	Northern	Northern.
Fourteenth and Fourteenth Patrol and Stable	89	Germantown	Electrical Bureau.
Fifteenth and Fifteenth Patrol and Stable	122	Suburban	Electrical Bureau.
Eighteenth and Eighteenth Patrol	108	Manufacturers'	Manufacturers'.
Twenty-first, Twenty-first Patrol and Stable	104	Powelton	Electrical Bureau.
Twenty-first Sub- and Stable	53	Powelton	Electrical Bureau.
Twenty-second	65	Manufacturers'	Manufacturers'.
Twenty-third	43	Columbia	Columbia.
Twenty-fourth	65	Manufacturers'	Manufacturers'.
Holmesburg	27	Suburban	Electrical Bureau.
Twenty-eighth	89	Diamond	Diamond.
Twenty-ninth, Twenty-ninth Patrol and Stable	106	Powelton	Electrical Bureau.
Vernon Park Stand	14	Germantown	Electrical Bureau.
Survey Office (Delaware river)	10	Edison	Electrical Bureau.

The following will show the number of City properties together with the number of lamps being lit free by the electric light companies:

Electric Light Company.	Current Houses.	Furnished Lamps.
Columbia	2	86
Diamond	2	185
Edison	2	65
Germantown	3	124
Kensington	2	102
Manufacturers	5	320
Northern	7	574
Powelton	6	380
Southern	1	56
Suburban	6	374
West End	1	46
	37	2,312

In addition to the above, the Electrical Bureau has wired three houses, viz: Engine No. 17, Engine No. 32 and the Twentieth District and Patrol, with three hundred and forty-five (345) lamps, for which no current has been furnished.

Seven (7) additional lamps were placed in the fire room of the "Stuart," two lamps placed on the desk in the roll room at the Twenty-fourth District, a knife blade switch introduced into the circuit of the Twenty-eighth District, a lamp and switch in the stairway at Engine No. 16. All the electric light wires in the roll room at the Tenth District were concealed, the band stand at Vernon Park, Germantown, was re-wired; wired and placed three lamps in the hose tower at Engine No. 14, placed a cluster of lamps in the roll room at the Tenth District, placed two lamps in the pump-house at Fox Chase Engine Company.

License Returns.

Thirty-six thousand and forty-nine dollars and fifty cents ($36.049.50) were paid into the City Treasury by the electric ligthing, telegraph and telephone companies as license charges on poles, wires, etc., for the year 1897.

Moneys Paid to the Receiver of Taxes.

The total amount paid to the Receiver of Taxes from all sources to the credit of this Bureau was Forty-six thousand, three hundred and four dollars and four cents ($46,304.04), viz:

License charges for the year 1897	$36,049	50
Police, signal and telephone service	1,300	00
Rental of ducts in City conduits	7,884	68
Rental of wire in City cables	150	00
Sale of old material	919	86
	$46,304	04

The City Solicitor collected and paid into the City Treasury, the sum of one hundred and forty-nine (149) dollars and eleven (11) cents, being the amount of a judgment obtained against Thompson C. Gill, on a bill for old material, dated May, 28, 1896, for $131.40.

Appropriations.

Of the nine hundred and eighty-four thousand one hundred and thirty-one (984,131) dollars and seventy-five (75) cents, appropriated or transferred to the Bureau for the year 1897, nine hundred and seventy-four thousand and eighty-five (974,085) dollars and ninety-four (94) cents were expended, and four thousand and ninety-four (4,094) dollars and six (6) cents merged, and five thousand nine hundred and fifty-one (5,951) dollars and seventy-five (75) cents were carried to the books of 1898.

(See Itemized Account in Table).

Number of Poles, Mileage of Wires, etc.

According to the returns made by the telegraph, electric light, telephone and street railway companies, there were overhead on the highways of the City, exclusive of those along railroad tracks:

16,873	wood poles	Increase of 1,757 over 1896.
27,573	iron poles in use by Trolley Companies	Decrease of 139 over 1896.
6,494	City poles (wood)	Increase of 62 over 1896.
2,146	City poles (iron)	Increase of 330 over 1896.
24	Girard Estate (iron).	
53,110	Total	Increase of 2,010 over 1896.

5,820.25	miles telegraph and telephone wire	Increase of 3,117.97 over 1896.
1,497.38	miles electric light wire	Increase of 148.49 over 1896.
1,532.9	miles City wire	Increase of 92.33 over 1896.
652.34	miles trolley	Increase of 7.96 over 1896.
9,502.87	Total	Increase of 3,366.75 over 1896.

There are fourteen thousand one hundred and thirty-six (14,136) attachments to City poles, being a decrease of four hundred and eighty-four (484), to support three hundred and ninety-nine and fifty-eight-hundredths miles (399.58) of wires.

Poles and Wires Taken Down by the City.

This Bureau has removed eighty-seven (87) poles and taken down fifty-two and sixty-seven-hundredths (52.67) miles of City, and twenty-three and seventeen-hundredths (23.17) miles of foreign wires, a total of seventy-five and eighty-four hundredths (75.84) miles.

The City poles on Market street, west of Thirtieth street, have been cleared of the City wires, they having been placed underground and only await the removal of about one-half dozen wires, belonging to private parties, when they will be taken down, probably early in the coming year.

Number of Telegraph Messages.

Five hundred and ninety-six thousand and forty-three (596,043) messages were transmitted over the circuits of the Police Telegraph System during 1897, an increase of forty-seven thousand three hundred and thirty (47,330) over 1896.

Operations of the Telephone Switchboard.

Nine hundred and eleven thousand seven hundred and seventy-eight (911,778) connections were made, and thirty-one thousand and ninety-six (31,096) messages transmitted over the two hundred and ninety (290) stations connected to the Board, an increase over 1896 of four hundred and twenty-nine thousand one hundred and ninety-three (429,193) connections, and a decrease of four thousand three hundred and forty-three (4,343) messages.

Number of Alarms of Fire.

Seven hundred and sixty-three (763) alarms were transmitted over the wires of the alarm system during the year, of which seven hundred and five (705) were first alarms, thirty (30) second alarms, fourteen (14) third alarms, seven (7) fourth alarms and one (1) fifth alarm; the latter through a combination of circumstances was unintentionally pulled in. False alarms, six (6). Three false alarms given were from keyless doors, and in three (3) instances by parties breaking open the key doors with a stone or brick and pulling in the boxes.

Ninety-eight (98) alarms were received over the signal wires from boxes in localities from which alarms had already been transmitted, but were not sent over the alarm circuits.

Twenty-three (23) alarms were received over the circuit of the Pneumatic Fire Alarm Telegraph Company, and transmitted by telephone to the engine company nearest the locality from which they were given.

Number of Instruments in Use and Owned by the City.

The Electrical Bureau had in use at the close of the year 1897, the following:

49	Police instruments
49	Relay and bell magnets on marble bases.
81	Alarm instruments located in engine houses, depots, etc., of which 13 are private.
932	Signal boxes, 58 of which are private and 9 on stages of theatres.
159	Keyless doors.
64	Bell magnets and keys connected with fire signal and telephone service.
31	Police signal and telephone office setts.
324	Police booths.
546	Police patrol signal boxes, of which 205 are wall boxes, and 16 are located in banks and other institutions.
889	Telephones.
6,494	Wood poles.
2,146	Iron poles.
1532.9	Miles of overhead wire.
68.51	Miles of telegraph and telephone cable underground.
2095.84	Miles of telegraph and telephone conductor underground.
45.3	Miles of electric light cable.
254,792	Feet of underground conduit.
1,766,366	Feet of ducts.
934	Mastarms.
39	Iron patrol box posts.
154	Iron signal box posts.
633	Junction boxes.
674	Manholes.
1	Three dial manual repeater.
1	Four dial manual repeater.
6	Banks of registers, 5 to a bank.
8	Banks of relays, 5 circuits to a bank.
30	Bell magnets.
1	Telephone switchboard, capacity 325 circuits.
1	Fire alarm switchboard, capacity 100 circuits.
2,900	Cells Callaud battery.
2,000	Cells Leclanche dry, and other open circuit batteries.
1	Motor dynamo for telephone switchboard work.
1	Complete set Thompson Reflecting Galvonometer.
1	Bunell Galvonometer and Wheatstone Bridge.
1	Bradley Galvonometer and Rheostat.

1	**Weston direct and alternating current volt meter.**
2	**Weston direct current volt meters.**
1	**Weston direct current milli volt meter.**
3	**Weston direct current ammeters.**
1	**Weston direct current milli ammeter.**
1	**Weston multiplier for direct current volt meter.**

Number of Calls Police Signal System.

Five million thirty-four thousand and six hundred and forty-one (5,034,641) calls were given over the circuits of the Police Signal and Telephone service during the year, an increase of two hundred and eighty thousand one hundred and twenty-three (280,123) over 1896; four million nine hundred and eighty-five thousand two hundred and fifty-one (4,985,251) were telephone calls, forty-one thousand six hundred and ninety-four (41,694) reports from private institutions, and forty-nine thousand three hundred and ninety (49,390) wagon calls.

A summary of the wagon calls shows that thirty-two thousand and forty-one (32,041) were for the conveyance of prisoners; seven thousand four hundred and two (7,402) for the conveyance of injured persons; one thousand one hundred and eighty-seven (1,187) for the conveyance of officers to and from fires; and eight thousand seven hundred and sixty (8,760) for miscellaneous work.

Construction, Maintenance and Supervision.

It is my desire to call attention to the very creditable manner in which the Manager, the Assistant Managers, the Chief Line Inspector and the Corps of Inspectors have performed the duties assigned them in the supervision of the construction and in the maintenance of the various systems under the care of the Bureau.

The first Assistant Manager, who exercises, as directed by the Chief, a general supervision over all electrical street work being done by private parties, has, under plans furnished by the officers of the Bureau, laid twenty-eight thousand six hundred and thirty-two (28,632) feet of conduit; laid and connected five and ninety-one-hundredths (5.91) miles of telegraph and telephone cable; one and eighty-eight-hundredths (1.88) miles of electric light cable; connected eighteen (18) cable poles; constructed ninety-three (93) manholes; erected and wired one hundred and forty-nine (140) mastarms; erected seventy-eight (78) iron electric light poles; erected one hundred (100) iron signal box posts; connected forty-eight (48) junction boxes in manholes; connected all engine and police stations, fire and patrol boxes, and private institutions connected with the patrol service in the old City proper, and attended to a vast amount of work incidental to the laying, construction and maintenance of underground electrical structures in a great City.

We are particularly well equipped in our corps of Inspectors, who, under the direction of the Second Assistant Manager, are able to undertake any subject that may arise with reference to the work of the Bureau and its supervision of that done by others; thus it makes no difference what branch of electrical work we are called on to do, we have those on the force who could be depended on to meet the requirements. When we consider they have three thousand two hundred and thirty-nine (3,239) instruments of all kinds to maintain and keep in repair, beside all manner of electrical installation to perform, it will be seen, from the high degree of efficiency shown by the various services under our care, that they are thoroughly proficient in their work.

The Chief Line Inspector has used in the extension of, and repairs to, the Fire, Police, Patrol and Telephone services, six hundred and forty-one (641) wood and iron poles; one thousand six hundred and ninety-five (1,695) crossarms; one hundred and forty-four (144) break arms;

twenty-six (26) iron brackets; two hundred and seven and forty-seven-hundredths (207.47) miles of iron and copper wire; two thousand four hundred and thirty-nine (2,439) feet of pipe in erecting patrol and fire boxes; nine thousand and fifty (9,050) feet of two (2) conductor and three thousand four hundred and sixteen (3,416) feet of four (4) conductor aerial cable; six hundred (600) feet of No. 2 Gauge electric light wire; erected and connected twenty-nine (29) signal boxes and twenty (20) patrol wall boxes; moved twenty-three (23) signal boxes and forty-seven patrol boxes; moved forty-eight (48), reset seventy (70) and took down eighty-seven (87) poles; put on one hundred and eighty-nine (189) guys; trimmed six hundred and ninety-one (691) trees; paved six hundred and thirty-two (632) holes; cemented ninety-five (95) holes; cut and relaid thirty-nine (39) flags, and dug out one hundred and eighty-five (185) stumps of poles; and took down from the City poles, seventy-five and eighty-four-hundredths (75.84) miles of wire.

Miscellaneous: Before their installation in City Hall, all the electrical work of the different Departments and Bureaus was done by private firms or individuals. Since then, this work has been performed and the instruments and wire maintained by this Bureau, entailing on our force an immense amount of additional labor.

We have given the Bureau of Water the benefits of our experience by reconstructing their telephone system with several new metallic circuits, and instruments of advanced make, greatly improving their service.

A large number of the fire boxes and most of the patrol boxes and iron electric light poles were painted during the year, the boxes being done by one of our inspectors and the painting of the poles supervised by him.

By request of the Park Commission, the telephones on the River Drive were connected to Sedgley Guard House, and the wires and instruments at Sedgley Guard House transferred to make room for improvements.

The annunciators on the new nest of elevators in the southeast corner and the one in the northwest corner of the City Hall were connected to wires leading to the Electrical Bureau Battery room.

At the request of the Bureau of Health, the disinfecting plant for the manufacture of the disinfectant product "Electrozone" was moved from the cellar of the City Hall, to the cellar of the Electrical Bureau storehouse, on Filbert west of Fifteenth street.

About one thousand (1,000) gallons of this product is made daily and distributed by the Bureau of Health, in places made necessary by the presence or possibility of disease, taking the place of all other forms of disinfecting material formerly in use for the purpose.

The storage battery on the Launch was equipped with forty (40) new positive elements on June 5th, and the circuit breaking device on the controller re-modelled to eliminate a fault in the original design.

By request of the Bureau of Health, this Bureau assumed charge of having their two phase motor attached to the ventilating apparatus, at the Diphtheria Ward, Municipal Hospital, re-wound and a brick foundation built, on which the motor was placed. The change was a decided improvement, as it freed the ward of the vibrations and noises to which it had previously been subjected.

The electric motor for turning the bridge and the electrical work on the bridge over Frankford creek, at Bridesburg, and the constant current arc light work in Saenger Hall, were inspected by this Bureau.

The small (6 amp hour) storage battery which was presented to this Bureau in May, 1895, by the Chloride Accumulator Company, the positive elements of which were renewed by them in October, 1896, was, owing to the failure of the negative elements, discontinued on October 1st of this year, they having been reduced to less than one-third of their capacity, rendered it useless for the service upon which it had been used.

With a view of standardizing the current, the batteries on the signal circuits have been re-arranged. The joints on several of the circuits showing a resistance higher than their length warranted, were cut out and soldered, resulting in a decided decrease in resistance.

The casualties and accidents laid at the door of electricity during 1897 were numerous:

During the early morning of January 18th, Charles Heinzeroth, a lineman in the employ of the Electrical Bureau, while in the performance of his duties, was instantly killed by contact with a Brush Electric Light Company's wire on the city pole at the southwest corner of Juniper and Race streets. During life, he had the universal respect of the employees of the Electrical Bureau, and was recognized by the officers as a hard working, industrious and conscientious man.

On the same date, a man whose name was unknown, fell from an electric light pole, at Third and Green streets.

On January 22, Thomas Powers, a Bell telephone lineman, fell off the City pole on State road, in front of Fitler's ropewalk.

On January 26, Austin McDermott, a Brush Electric Light Company's trimmer fell from the Western Union pole at Front and Dana streets.

On February 6, James Rowan, a Brush Electric Light trimmer, fell from a lamp pole, at the southwest corner of Twenty-second and Summer streets.

On February 11, Thomas Kiley, eighteen years, and another boy whose name was unknown, were severely shocked by handling a broken telephone wire that laid across an incandescent loop belonging to the Northern

Electric Light and Power Company, on Newmarket street below Callowhill street.

On January 16, Daniel Kennedy, a lineman of the Kensington Electric Company, was instantly killed while working on an electric light pole belonging to that Company, at the northwest corner of Otis street and Girard avenue, by coming in contact with a live wire.

On July 13, Charles Teffeau, or Toffo, an employee of the Suburban Electric Company, was killed by contact with a live wire at Fox Chase.

On July 24, Frederick Beintzle, a saloonkeeper, was killed while in contact with an electric light switch in the saloon at the southeast corner of Fifth street and Lehigh avenue.

On August 1, Fannie Masterson, a Jewish girl, was shocked by coming in contact with a Brush Electric light wire at the corner of Second and New streets.

On August 8, Frank G. Herring, and young son, were lightly shocked by contact with a broken guy wire, that laid on the Germantown Electric Light Company's wires, at Queen lane and Pennsylvania railroad.

On October 13, Charles Taylor and Alexander Jackson were severely shocked by contact with a Brush electric light wire, while painting under the Market street bridge.

On November 16, Levi Potter, colored, was killed by the metal rod of his umbrella coming in contact with the frame of a Brush Electric Light Company's lamp, in front of 1705 South street.

On November 17, John Lovering, an employee of the Bell Telephone Company, was killed while raising a pole in the private yard on Fisher street, south of Somerset street; the pole falling on him crushing his skull.

On December 7, John Smith, an employee of the Northern Electric Light and Power Company, was killed while changing a transformer in front of the saloon, 2035 Germantown avenue.

In conclusion, permit me to express my thanks for the aid rendered me by the Mayor and yourself, in administering the affairs of the Bureau; also, to the Manager of the Bureau for the able manner in which he has discharged the duties of his office; and my appreciation for the manner in which the employees of the Bureau have attended to their several duties.

Respectfully,
D. R. WALKER,
Chief of Bureau.

Sub-Division.										
Lost Children.		Estrays.				Vehicles.				
[illegible]	[illegible]	204	33	22	83	[illegible]	53	1	[illegible]	11
15	11	15		2		3				
	1									
[illegible]	[illegible]	[illegible]		2	3				1	
1	1	1								
[illegible]		[illegible]				[illegible]				
		3	[illegible]	4	3	[illegible]				
[illegible]		2				[illegible]				
2				1	1	[illegible]				
[illegible]	[illegible]	[illegible]		[illegible]	1	[illegible]	[illegible]		[illegible]	5
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15	2		[illegible]	
[illegible]	[illegible]	30		[illegible]	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]			[illegible]	
		[illegible]	[illegible]	[illegible]		[illegible]				
[illegible]	[illegible]					[illegible]				
[illegible]	[illegible]	[illegible]				[illegible]			[illegible]	

Summary of the Police Signal and Telephone Service Wagon Calls during 1897.

MONTHS.	Patrol No. 2. 2d District.	Patrol No. 3. 3d & 4th Districts.	Patrol No. 7. 7th & 8th Districts.	Patrol No. 9. 9th District.	Patrol No. 10. 10th District.	Patrol No. 11. 11th District.	Patrol No. 12. 12th District.	Patrol No. 13. 13th District.	Patrol No. 14. 14th District.	Patrol No. 15. 15th & 27th Districts.	Patrol No. 16. 16th District.	Patrol No. 17. 1st & 17th Districts.	Patrol No. 18. 18th District.	Patrol No. 19. 5th & 19th Districts.	Patrol No. 20. 6th & 20th Districts.	Patrol No. 21. 21st District.	Patrol No. 22. 22d & 28th Districts.	Patrol No. 23. 23d District.	Patrol No. 24. 24th District.	Patrol No. 25. 25th District.	Patrol No. 26. 26th District.	Patrol No. 29. 29th District.	Patrol No. 30. 30th District.	Totals.
January...........	224	336	218	150	160	101	139	42	67	45	101	182	225	283	305	125	155	99	71	137	59	81	96	3,351
February..........	200	314	208	207	120	87	142	56	40	35	92	162	210	195	276	97	110	85	79	141	45	93	85	3,079
March...............	251	350	216	257	203	133	147	59	52	51	158	216	239	223	252	121	128	77	81	170	67	119	101	3,671
April.................	272	360	210	215	199	141	151	62	70	42	149	252	190	250	257	154	117	107	84	181	74	117	89	3,753
May..................	325	458	282	243	193	137	176	80	90	68	239	269	193	317	261	173	146	158	118	207	90	144	147	4,517
June..................	300	436	275	306	185	116	114	80	80	61	222	248	200	378	276	157	170	143	96	209	83	190	146	4,480
July...................	344	496	238	264	191	142	134	85	82	59	204	270	185	322	222	156	228	112	107	212	104	165	123	4,446
August	349	559	260	238	225	123	149	99	85	70	224	253	193	355	273	152	205	156	159	209	98	202	152	4,792
September........	293	412	261	208	197	129	142	112	90	71	206	281	207	312	316	171	175	126	124	188	97	167	148	4,463
October............	293	477	273	284	199	115	131	68	68	52	189	279	197	362	303	145	120	133	121	199	107	120	146	4,381
November.........	257	387	254	216	202	132	97	59	60	41	170	240	187	356	300	135	177	95	120	162	73	75	104	3,991
December.........	249	582	246	272	253	149	138	84	81	74	164	237	182	376	348	163	154	124	100	166	117	108	79	4,466
Totals.........	3,357	5,197	2,941	2,890	2,328	1,505	1,660	886	865	672	2,118	2,909	2,420	3,679	3,411	1,789	1,885	1,415	1,260	2,181	1,014	1,582	1,416	49,390

Summary of the Police Signal and Telephone Service.

CALLS FROM PRIVATE INSTITUTIONS.

MONTHS.	Penny Savings Fund, 1st District.	Guarantee Trust Co., 3d District.	Bank of Republic, 4th District.	West End Trust Co., 5th District.	Market St. Nat'l Bank, 6th District.	Commonwealth Trust Co., 6th District.	Keystone Watch Case Co., 9th District.	Germantown Bank, 14th District.	Germantown Trust Co., 14th District.	Conyers Button & Co., 14th District.	Southwestern Bank, 19th District.	Centennial Bank, 21st District.	University Library, 21st District.	Northwestern Bank, 23d District.	Total Calls from Private Institutions.	Total of all Calls.
January	52	163	124	333	62	372	341	216	372	312	420	186	372	188	3,518	419,627
February	44	146	112	293	56	336	309	196	336	336	420	168	336	177	3,265	378,597
March	52	160	124	315	62	372	341	217	372	372	451	186	372	196	3,592	426,775
April	50	152	120	315	60	360	330	210	360	360	408	180	360	193	3,458	416,418
May	54	156	124	318	62	372	341	217	372	372	456	186	372	208	3,605	429,698
June	52	162	120	323	60	360	330	210	327	342	417	180	360	169	3,442	410,925
July	52	160	124	324	62	372	341	210	331	324	428	179	353	165	3,425	413,900
August	52	160	124	324	62	372	341	217	372	306	430	186	372	198	3,516	419,578
September	50	158	120	306	60	358	330	209	360	360	404	180	360	190	3,445	419,034
October	54	162	124	324	60	366	341	222	360	361	396	186	372	198	3,526	438,186
November	50	156	120	324	58	350	330	195	359	360	421	180	360	191	3,457	420,232
December	51	164	120	324	52	316	341	208	335	337	438	186	372	199	3,450	439,676
Totals	616	1,899	1,460	3,823	716	4,306	4,016	2,527	4,256	4,142	5,122	2,188	4,361	2,267	41,694	5,084,641

Showing the Box in each District having the Greatest Number of Telephone Calls during the Year 1897.

DISTRICTS.	Number of Box.	Location.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
First	123	Sixteenth and Bainbridge streets	1,203	1,070	1,208	1,111	1,210	1,162	1,207	1,207	1,174	1,202	1,157	1,219	14,125
Second	55	Fourth and Christian streets	1,583	1,423	1,583	1,526	1,579	1,533	1,583	1,611	1,533	1,579	1,527	1,603	18,663
Third	321	Delaware avenue and Dock street	2,258	2,269	2,994	2,818	3,012	2,802	2,940	3,008	3,001	3,007	2,840	3,018	34,397
Fourth	3	Sixth and Arch streets	1,582	1,430	1,586	1,538	1,584	1,531	1,582	1,585	1,530	1,582	1,531	1,341	18,402
Fifth	25	Cope and Sansom streets	1,438	1,210	1,701	2,159	2,125	1,902	1,902	1,916	2,079	2,171	1,925	1,786	22,318
Sixth	55	Ninth and Race streets	1,591	1,380	1,506	1,556	1,661	1,713	1,790	1,872	1,792	1,831	1,660	1,416	19,768
Seventh	36	Front and Wilmer streets	1,300	1,090	1,309	1,222	1,320	1,190	1,285	1,208	1,142	1,282	1,166	1,281	14,791
Eighth	9	Darien and Willow streets	1,918	1,512	1,960	1,895	1,935	1,884	1,945	1,975	1,920	1,897	1,875	1,895	22,611
Ninth	35	Nineteenth and Hamilton streets	2,297	2,1[illegible]6	2,294	2,219	2,295	2,222	2,290	2,297	2,220	2,298	2,221	2,299	27,111
Tenth	421	Second street and Girard avenue	1,581	1,428	1,583	1,530	1,581	1,535	1,581	1,582	1,530	1,581	1,535	1,582	18,629
Eleventh	3 5	Belgrade and Palmer streets	1,608	1,068	1,185	1,143	1,175	1,143	1,170	1,187	1,146	1,180	1,126	1,184	14,315
Twelfth	3	Watt street and Girard avenue	2,013	1,739	1,450	1,286	1,556	1,366	1,215	1,115	1,075	1,172	1,253	1,537	16,777
Thirteenth	3	Ridge avenue and Main street	1,084	974	1,146	1,112	1,123	1,126	1,141	1,131	1,101	1,141	1,081	1,146	13,353
Fourteenth	332	Germantown ave. and Wister street	808	738	822	801	808	742	741	750	789	801	665	789	9,263
Fifteenth	333	Frankford avenue and Sellers street	1,239	1,131	1,602	1,725	1,798	1,726	1,731	1,752	1,768	1,820	1,675	1,857	19,829

Showing the Box in each District having the Greatest Number of Telephone Calls, etc.—Continued.

DISTRICTS.	Number of Box.	Location.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Sixteenth............	62	41st street and Pennsylvania R. R.......	1,227	1,198	1,498	1,516	1,581	1,423	1,548	1,486	1,575	1,565	1,464	1,660	17,746
Seventeenth.........	144	Thirteenth and Reed streets...............	1,953	1,764	1,953	1,890	2,015	2,513	2,728	2,399	1,770	2,449	2,010	1,958	25,897
Eighteenth	3	Third and Norris streets.....................	903	817	902	876	907	877	909	908	877	901	878	903	10,658
Nineteenth.........	21	Eleventh and Barley streets................	904	1,013	1,129	1,652	1,678	1,161	1,109	1,403	2,122	2,304	2,078	2,287	18,840
Twentieth	27	Nineteenth and Race streets...............	1,189	1,070	1,200	1,155	1,173	1,243	1,414	1,379	1,473	1,495	1,457	1,440	15,678
Twenty-first.........	26	Thirty-eighth and Sansom streets......	1,582	1,348	1,836	1,830	1,899	1,864	1,800	1,929	1,802	2,013	1,821	1,918	21,842
Twenty-second ...	43	Eighteenth and York streets...............	1,285	1,181	1,285	1,202	1,286	1,200	1,283	1,281	1,201	1,286	1,201	1,288	14,979
Twenty-third......	21	23d street and Columbia avenue.........	1,864	1,647	1,892	1,792	1,857	1,572	1,347	1,541	1,538	1,873	1,754	1,878	20,550
Twenty-fourth....	46	Kensington avenue and Tioga street..	601	589	589	570	597	561	600	602	566	607	585	592	7,059
Twenty-fifth.......	322	Twelfth and Mifflin streets.................	1,456	1,330	1,488	1,373	1,346	1,418	1,504	1,489	1,453	1,530	1,417	1,437	17,241
Twenty-sixth... ..	341	Cumberland and Jasper streets..........	1,174	1,064	1,178	1,136	1,176	1,137	1,184	1,177	1,141	1,179	1,184	1,177	13,887
Twenty-seventh..	22	Keystone and Washington streets......	733	664	729	710	669	602	466	433	449	817	758	795	7,825
Twenty-eighth....	41	Twelfth and Berks streets...................	1,148	1,086	1,110	975	1,070	1,019	1,020	889	995	1,081	1,090	1,104	12,587
Twenty-ninth.....	423	48th and Lancaster avenue.................	1,341	1,172	1,321	1,308	1,328	1,261	1,271	1,335	1,280	1,387	1,286	1,362	15,602
Thirtieth.............	54	Fifth and Butler streets.......................	1,281	1,260	1,293	1,246	1,274	1,285	1,296	1,288	1,237	1,220	1,189	1,290	15,154

Showing the Box in each District having the greatest Number of Wagon Calls during the year 1897.

DISTRICTS.	Number of Box.	LOCATION.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
First	123	Sixteenth and Bainbridge streets	10	19	15	10	19	14	13	17	15	19	15	5	171
Second	51	Leithgow and Bainbridge streets	20	20	34	47	48	64	42	43	35	43	27	36	459
Third	44	Sixth and Rodman streets	43	49	42	48	91	67	88	86	78	68	52	89	801
Fourth	333	Delaware avenue and Market street	8	10	8	6	15	7	16	13	14	8	10	15	130
Fifth	17	Eighteenth and Lombard streets	8	17	11	14	20	31	30	22	25	17	17	19	231
Sixth	331	Ninth and Market streets	22	15	14	19	8	9	10	13	11	14	14	16	165
Seventh	33	Second and Willow streets	16	20	10	10	16	21	13	20	18	19	15	14	192
Eighth	9	Darien and Willow streets	7	2	8	6	7	6	15	10	8	9	14	6	93
Ninth	13	Twenty-fourth and Spring Garden streets	12	10	13	13	23	13	20	10	27	27	24	22	215
Tenth	413	Front and Laurel streets	13	12	26	17	20	24	21	33	30	33	33	27	289
Eleventh	31	Girard avenue and Crease street	17	13	15	15	16	17	12	10	11	12	14	19	171
Twelfth	3	Watt street and Girard avenue	6	5	11	10	24	7	16	12	7	5	3	7	113
Thirteenth	16	Main and Jamestown streets	5	14	10	15	15	14	17	24	25	21	16	18	194
Fourteenth	6	East Chelton avenue	10	1	8	6	9	3	10	9	9	8	7	9	89
Fifteenth	152	Oxford pike and Frankford avenue	2	7	8	2	14	5	9	15	7	7	5	14	90

Showing the Box in each District having the greatest Number of Wagon Calls during the year 1897.

DISTRICTS.	Number of Box.	LOCATION.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
Sixteenth	62	Forty-first street and Pennsylvania Railroad	3	2	9	8	13	13	17	14	27	13	13	3	135
Seventeenth	52	Point Breeze avenue and Dickinson street	6	12	12	19	15	10	12	9	20	17	12	6	151
Eighteenth	44	Mascher and Huntingdon streets	7	10	15	9	10	16	10	13	15	13	11	10	139
Nineteenth	53	Eighth and Sansom streets	7	28	16	17	8	14	9	16	16	21	24	23	199
Twentieth	3	Fifteenth and Market streets	47	51	41	35	40	47	23	34	40	29	40	37	464
Twenty-first	243	Forty-ninth street and Woodland avenue	5	7	7	7	6	6	15	11	14	12	10	4	102
Twenty-second	37	Twenty-eighth and York streets	6	6	4	5	4	5	14	8	5	3	10	6	76
Twenty-third	21	Twenty-third street and Columbia avenue	7	15	7	8	8	2	5	8	5	14	7	10	96
Twenty-fourth	15	Garnet and Somerset streets	8	10	14	13	10	16	10	30	19	16	17	24	187
Twenty-fifth	35	Sixth and Dickinson streets	7	7	15	20	11	14	9	14	12	15	3	3	130
Twenty-sixth	341	Cumberland and Jasper streets	11	12	15	10	13	11	21	14	15	16	8	14	160
Twenty-seventh	125	Bristol pike and Longshore street	4	......	1	1	1	4	2	......	2	1	......	1	17
Twenty-eighth	36	Twenty-ninth and Edgley streets	5	7	9	7	5	14	14	13	19	12	7	7	119
Twenty-ninth	223	Fifty-fourth street and Lansdowne avenue	4	7	14	10	31	47	29	43	25	9	4	9	232
Thirtieth	33	Kensington avenue and "C" street	8	3	8	3	14	15	14	10	8	13	8	5	109

Synopsis of Wagon Calls for the Various Patrols during the year 1897.

Months.	Patrol No. 2. 2d District.					Patrol No. 3. 3d and 4th Districts.					Patrol No. 7. 7th and 8th Districts.				
	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.
January	140	30	3	51	224	210	61	19	46	336	125	35	4	64	218
February	122	27	6	45	200	206	49	14	45	314	118	20	5	65	208
March	170	35	3	43	251	232	45	19	54	350	125	21	6	64	216
April	198	30	4	40	272	248	49	19	44	360	110	37	4	59	210
May	210	54	4	57	325	292	81	22	63	458	176	31	2	73	282
June	207	44	2	47	300	284	72	18	62	436	180	30	2	63	275
July	236	47	6	55	344	325	85	22	64	496	157	33	7	41	238
August	236	41	7	65	349	381	73	26	79	559	163	27	4	66	260
September	176	46	5	66	293	284	69	24	65	342	146	41	5	69	261
October	174	48	5	66	293	330	56	19	72	477	181	30	3	59	273
November	165	41	5	46	257	220	80	21	66	387	167	29	5	53	254
December	141	44	10	54	249	391	77	27	87	582	153	27	12	54	246
Totals	2,175	487	60	635	3,357	3,403	797	250	747	4,197	1,791	361	59	730	2,941

Synopsis of Wagon Calls of the Various Patrols during the year 1897—Continued.

MONTHS.	PATROL NO. 9. 9TH DISTRICT.					PATROL NO. 10. 10TH DISTRICT.					PATROL NO. 11. 11TH DISTRICT.				
	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.
January	83	31	4	32	150	124	19	3	14	160	76	17	1	7	101
February	119	21	5	62	207	104	9	1	6	120	73	9	4	1	87
March	138	30	9	80	257	158	24	8	13	203	103	13	2	15	133
April	106	43	4	62	215	139	27	6	27	199	97	20	2	22	141
May	131	51	4	57	243	143	25	1	24	193	105	18	4	10	137
June	187	44	3	72	306	143	17	3	22	185	82	17	2	15	116
July	156	41	....	67	264	138	31	2	20	191	92	33	....	17	142
August	146	45	4	43	238	175	28	4	19	226	99	12	2	10	123
September	111	51	3	43	208	149	30	7	11	197	93	20	1	15	129
October	158	60	3	63	284	161	22	4	12	199	91	18	1	5	115
November	130	49	6	61	246	158	23	3	18	202	100	16	2	14	132
December	145	61	9	57	272	188	26	7	32	253	120	20	1	8	149
Totals	1,610	527	54	699	2,890	1,780	281	49	218	2,328	1,131	213	22	139	1,505

Summary of Wagon Calls of the Various Patrols during the year 1897—Continued.

Months.	Patrol No. 12. 12th District.					Patrol No. 13. 13th District.					Patrol No. 14. 14th District.				
	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.
January	87	22	2	28	139	24	10	5	3	42	39	5	3	20	67
February	81	35	3	23	142	40	9	1	6	56	19	5	3	13	40
March	89	24	7	27	147	41	9	2	7	59	35	5	1	11	52
April	87	21	3	40	151	46	8	1	7	62	42	5	5	18	70
May	91	30	4	51	176	48	12	2	18	80	57	9	2	22	90
June	42	19	6	47	114	51	22	1	6	80	39	13	2	26	80
July	66	27	2	39	134	45	32	2	6	85	40	16	2	24	82
August	78	29	4	38	149	57	25	1	16	99	48	15	....	22	85
September	62	38	10	32	142	66	28	3	15	112	49	18	4	19	90
October	73	33	3	22	131	44	15	2	7	68	32	13	7	16	68
November	53	25	6	13	97	34	16	3	6	59	32	13	3	12	60
December	71	21	7	39	138	45	31	1	7	84	43	7	3	28	81
Totals	880	324	57	399	1,660	541	217	24	104	886	475	124	35	231	865

Synopsis of Wagon Calls of the Various Patrols during the year 1897—Continued.

MONTHS.	PATROL NO. 15. 15TH AND 27TH DISTRICTS.					PATROL NO. 16. 16TH DISTRICT.					PATROL NO. 17. 1ST AND 17TH DISTRICTS.				
	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.
January	23	11	1	10	45	71	21	5	4	101	132	16	3	31	172
February	15	5	1	14	35	64	19	2	7	92	122	18	3	19	162
March	34	2	3	12	51	117	33	4	4	158	163	17	3	33	216
April	18	9	....	15	42	104	25	3	17	149	174	27	6	45	252
May	33	8	1	26	68	141	61	3	34	239	194	25	3	47	269
June	29	11	....	21	61	156	38	7	21	222	169	24	2	53	248
July	34	10	....	15	59	139	40	4	21	204	188	36	2	44	270
August	40	10	....	20	70	179	37	2	6	224	174	32	5	42	253
September	47	5	1	18	71	159	34	6	7	206	197	38	4	42	281
ctober	34	5	....	13	52	145	31	3	10	189	199	28	6	46	279
November	25	6	1	12	44	128	21	8	13	170	180	23	4	33	240
December	44	10	1	13	74	105	48	5	6	164	185	41	6	25	257
Totals	376	92	9	195	672	1,508	408	52	150	2,118	2,077	325	47	460	2,909

Synopsis of Wagon Calls of the Various Patrols during the year 1897—Continued.

MONTHS.	PATROL NO. 18. 18TH DISTRICT.					PATROL NO. 19. 5TH AND 19TH DISTRICTS.					PATROL NO. 20. 6TH AND 20TH DISTRICTS.				
	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.
January	85	18	5	117	225	139	23	10	61	233	220	39	7	39	305
February	110	23	2	75	210	121	16	3	55	195	197	44	1	34	276
March	120	27	5	87	239	122	33	5	63	223	180	39	5	28	252
April	133	15	5	37	190	149	22	7	72	250	177	44	5	41	267
May	129	23	2	39	193	218	35	1	63	317	194	38	4	28	264
June	137	32	6	34	209	267	32	2	77	378	201	46	1	28	276
July	134	26	2	23	185	214	28	2	78	322	147	50	2	23	222
August	136	27	....	33	196	243	39	4	69	355	176	55	3	39	273
September	138	14	3	52	207	226	30	4	52	312	221	60	8	27	316
October	151	19	4	23	19[illegible]	268	32	7	55	362	207	64	6	26	303
November	126	24	2	35	187	247	35	7	67	356	222	41	8	38	309
December	115	23	3	41	182	282	21	9	64	376	259	56	5	28	348
Totals	1,514	271	39	596	2,420	2,496	346	61	776	3,679	2,401	576	55	379	3,411

Synopsis of Wagon Calls of the Various Patrols during the year 1897—Continued.

MONTHS.	PATROL NO. 21. 21ST DISTRICT.					PATROL NO. 22. 22D AND 28TH DISTRICTS.					PATROL NO. 23. 23D DISTRICT.				
	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.
January	60	42	7	16	125	82	29	11	33	155	44	22	8	25	99
February	67	13	4	13	97	73	14	3	20	110	45	15	1	24	85
March	70	29	5	17	121	75	20	7	26	128	33	18	4	22	77
April	82	50	4	18	154	78	13	5	21	117	61	19	3	24	107
May	105	40	4	24	173	96	18	7	25	146	65	21	6	66	158
June	101	32	6	18	157	90	36	3	41	170	75	21	1	46	143
July	84	51	8	13	156	175	25	3	25	228	43	36	2	31	112
August	98	41	2	11	152	112	46	7	40	205	83	25	2	46	156
September	101	49	9	12	171	101	33	6	35	175	69	22	3	32	126
October	90	35	3	17	145	66	28	4	22	120	83	16	1	33	133
November	123	34	8	20	185	113	26	7	31	177	55	10	5	25	95
December	111	33	6	13	163	92	24	7	31	154	55	38	5	26	124
Totals	1,092	449	66	192	1,799	1,153	312	70	350	1,885	711	263	41	400	1,415

Synopsis of Wagon Calls of the Various Patrols during the year 1897—Continued.

MONTHS.	PATROL NO. 24. 24TH DISTRICT.					PATROL NO. 25. 25TH DISTRICT.					PATROL NO. 26. 26TH DISTRICT.				
	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.
January	50	15	4	2	71	95	32	5	5	137	47	9	....	3	59
February	33	9	4	33	79	100	33	5	3	141	37	7	....	1	45
March	39	22	2	18	81	127	31	4	8	170	54	8	....	5	67
April	40	16	3	25	84	129	34	5	33	181	67	2	....	5	74
May	95	14	3	6	118	128	34	2	43	207	77	2	....	11	90
June	60	19	4	13	96	124	43	1	41	209	68	12	....	3	83
July	44	23	4	36	107	151	37	4	20	212	89	6	....	9	104
August	101	27	3	28	159	129	60	1	19	209	91	5	....	2	98
September	91	13	2	18	124	112	46	8	22	188	84	5	....	8	97
October	88	16	5	12	121	130	40	3	26	199	103	1	....	3	107
November	89	18	3	10	120	105	39	5	13	162	64	6	....	3	73
December	67	28	1	4	100	101	48	7	10	166	104	10	....	3	117
Totals	797	220	38	205	1,260	1,411	477	50	243	2,181	885	73	....	56	1,014

Synopsis of Wagon Calls of the Various Patrols during the year 1897—Continued.

MONTHS.	PATROL NO. 29. 29TH DISTRICT.					PATROL NO. 30. 30TH DISTRICT.				
	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.
January	45	6	1	29	81	66	9	4	17	96
February	50	5	1	37	93	58	14	2	11	85
March	70	2	1	46	119	74	10	2	15	101
April	67	9	1	40	117	54	8	2	25	89
May	91	6	4	43	144	86	13	4	44	147
June	127	9	1	53	190	74	19	6	47	146
July	102	11	1	52	166	68	16	2	37	123
August	146	6	2	48	202	74	15	2	61	152
September	110	8	2	47	167	85	19	2	42	148
October	64	3	1	42	120	102	16	4	24	146
November	40	4	1	30	75	64	8	1	31	104
December	56	14	1	37	108	61	9	1	8	79
Totals	968	98	17	504	1,582	866	156	32	362	1,416

Synopsis of Wagon Calls during 1897.

MONTHS.	Conveyance of Prisoners.	Conveyance of Injured Persons.	Conveyance of Officers to and from Fires.	Miscellaneous.	Total Wagon Calls.
January	2,057	522	115	657	3,351
February	1,974	419	74	612	3,079
March	2,369	497	107	698	3,671
April	2,386	543	97	727	3,753
May	2,905	649	89	874	4,517
June	2,898	652	79	856	4,480
July	2,867	740	79	760	4,446
August	3,165	720	85	822	4,792
September	2,877	717	120	749	4,463
October	2,974	689	94	674	4,381
November	2,640	587	114	650	3,991
December	2,934	717	134	681	4,466
Totals	32,041	7,402	1.187	8,760	49,390

Number of Messages Sent and Received over the Telephone in 1897.

MONTHS.	Total number of messages.	Received.	Sent.	Mayor.		Director, Department of Public Safety.		Director, Department of Public Works.		Superintendent of Police.		Fire Headquarters.		Bureau of Highways.	Bureau of Gas.	Bureau of Water.	Classified, received and sent.	Miscellaneous, received and sent.	AMBULANCE CALLS.																		Total calls and connections.‖
				R.*	S.*	R.	S.	R	S.	R.	S.	R.	S.	Sent.	Sent.	Sent.			St. Mary's.	St. Agnes'.	University.	Episcopal.	Medico-Chirurgical.	Hahnemann.	S. P. C. A.	St. Joseph's.	German.	Jefferson.	Philadelphia.	Pennsylvania.	Children's.	Jewish.	Samaritan.	Presbyterian.	Municipal.	Methodist.	Total ambulance calls.	
January	2,595	1,033	1,512	1	3	13	30	2	1	83	50	34	605	115	31	105	821	1,774	10	4	3	50	6	8	9	3	9	2	88	26	4	5	6	4	163	2	402	73,885
February........	2,193	937	1,256	...	...	6	4	3	2	64	23	22	355	75	32	65	479	1,714	8	2	1	20	...	3	2	7	2	1	66	10	...	3	8	1	119	...	248	63,668
March............	2,637	1,116	1,521	6	5	23	20	5	1	100	40	27	522	144	24	104	749	1,888	2	7	1	22	3	13	4	4	13	3	94	20	2	6	2	2	122	1	321	75,682
April	2,438	1,132	1,356	6	1	13	14	2	...	86	30	25	590	68	24	94	767	1,721	4	4	3	15	7	6	9	8	9	3	90	11	...	7	...	2	130	2	310	73,253
May	2,455	992	1,463	5	1	24	18	2	2	60	26	36	515	78	43	130	680	1,766	3	4	4	20	7	11	14	10	16	6	90	38	4	12	7	8	126	3	383	85,915
June..............	2,564	1,032	1,532	7	2	23	23	6	3	110	40	39	476	110	59	154	729	1,835	6	7	6	30	8	9	22	9	11	6	69	24	9	11	9	14	123	4	377	86,907
July	2,398	921	1,477	3	...	18	20	2	2	70	25	32	433	147	51	137	605	1,792	6	6	5	33	6	7	14	8	12	5	91	24	...	11	7	6	99	6	346	65,361
August...........	2,388	1,042	1,346	2	...	11	23	1	8	102	34	26	495	84	31	136	697	1,691	8	7	2	31	5	8	16	6	8	4	79	24	4	5	5	11	102	9	334	61,275
September	2,609	1,251	1,355	2	3	7	14	3	4	120	35	19	595	67	35	99	802	1,807	3	10	4	28	11	14	18	10	9	[illegible]	55	27	2	7	10	2	78	3	300	77,566
October..........	2,775	1,209	1,566	6	3	26	33	3	2	85	37	31	582	126	49	93	808	1,967	7	6	8	42	9	16	14	11	9	7	82	33	2	7	9	14	142	4	422	80,901
November.......	2,977	1,247	1,730	4	7	24	82	3	4	109	48	32	635	106	42	86	898	2,079	4	10	8	35	8	12	17	6	10	6	76	31	8	3	6	12	120	8	375	82,722
December.......	3,017	1,376	1,611	9	8	29	27	2	3	103	27	38	669	68	43	102	915	2,102	10	11	9	28	8	16	22	7	11	7	91	16	2	9	7	8	106	6	374	84,643
Totals..........	31,096	13,341	17,755	51	33	217	258	34	27	1,092	416	361	6,472	1,188	461	1,305	8,960	22,136	66	78	54	354	78	123	161	89	119	59	971	281	32	86	71	84	1430	48	4,187	911,778

* R—Received. S—Sent.

Summary of the Operation of the Fire Alarm Telegraph in 1897.

MONTHS.	First Alarms.	Second Alarms.	Third Alarms.	Fourth Alarms.	Fifth Alarms.	False Alarms.	Totals.
January	68	3	2	1	....	1	70
February	61	2	1	....	....	....	64
March	56	2	1	....	....	....	59
April	63	2	....	....	....	1	66
May	60	1	....	....	....	....	61
June	48	3	1	....	....	1	53
July	45	1	....	....	....	....	46
August	45	3	1	....	....	....	49
September	62	2	2	2	....	3	71
October	64	2	2	1	....	....	69
November	64	5	2	2	1	....	74
December	74	4	2	1	....	....	81
Totals	705	80	14	7	1	6	763

Showing Number of Alarms for each Hour of the Day during 1897.

MONTHS.	A. M.						P. M.						Total Day Alarms.	P. M.						A. M.						Total Night Alarms.	Total.
	6	7	8	9	10	11	12	1	2	3	4	5		6	7	8	9	10	11	12	1	2	3	4	5		
January…………	1	5	5	2	1	3	1	3	1	4	2	4	32	5	7	6	3	1	2	1	6	2	1	2	2	38	70
February…………	……	3	1	1	2	5	3	2	3	1	4	1	26	5	3	7	1	1	1	4	5	2	5	2	2	38	64
March…………	……	……	……	1	1	1	3	3	1	2	3	3	18	7	9	6	4	7	……	2	2	1	1	2	……	41	59
April…………	1	5	1	……	1	1	4	4	2	1	1	1	22	1	9	4	5	3	6	1	2	8	1	2	2	44	66
May…………	……	1	2	2	1	2	3	……	4	4	……	6	25	2	6	4	7	2	4	3	2	……	2	3	1	36	61
June…………	1	1	1	1	1	4	……	6	……	1	4	2	22	4	2	3	5	2	3	3	8	1	……	……	……	31	53
July…………	1	1	2	1	2	1	5	2	2	2	1	6	26	3	……	4	2	1	1	3	4	1	1	……	……	20	46
August…………	1	……	……	3	5	5	……	……	2	2	3	……	22	2	4	2	2	2	2	6	2	1	……	……	4	27	49
September…………	……	3	5	2	2	1	2	……	2	1	9	3	30	3	2	2	4	5	3	3	1	9	4	3	2	41	71
October…………	1	2	4	……	……	6	……	4	2	7	5	3	34	6	4	3	1	2	1	4	8	1	2	2	1	35	69
November…………	4	4	……	2	5	……	3	6	……	2	4	……	30	9	9	2	8	6	4	2	……	1	2	1	……	44	74
December…………	1	6	3	1	4	3	3	3	3	3	3	4	37	7	4	5	5	5	4	5	3	2	1	2	1	44	81
Totals………	11	31	24	16	25	32	27	33	22	31	39	33	324	54	59	48	47	37	31	37	43	29	20	19	15	439	763

Showing the Number of Alarms from each Box during 1897.

Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.
2	2	42	1	83	2	142	1	178	......	227	......	264	2	312	1
3	1	43	1	84	......	143	2	179	4	228	2	265	1	313	......
4	1	45	7	85	2	144	......	181	1	229	1	266	3	314	2
5	1	46	......	86	......	145	......	182	3	231	9	267	......	315	2
6	3	47	1	87	1	146	4	183	......	232	2	268	......	316	1
7	6	48	2	89	4	147	1	184	......	233	......	269	......	317	3
8	1	49	1	91	4	148	1	185	3	234	3	271	3	318	2
9	......	51	1	92	......	149	......	186	......	235	......	272	2	319	1
12	6	52	3	93	3	151	2	187	......	236	2	273	......	321	......
13	2	53	1	94	1	152	......	188	......	237	2	274	1	322	1
14	1	54	2	95	......	153	1	189	1	238	......	275	......	323	1
15	1	56	......	96	2	154	......	191	1	239	......	276	1	324	1
16	2	57	3	97	......	155	......	192	1	241	......	277	......	325	2
17	1	58	7	98	2	156	......	193	......	242	3	278	......	326	2
18	......	59	......	121	......	157	3	194	......	243	1	279	......	327	1
19	1	61	......	122	1	158	......	195	......	244	......	281	1	328	1
21	1	62	......	123	......	159	......	196	......	245	......	282	1	329	......
23	......	63	1	124	......	161	2	197	2	246	......	283	1	331	3
24	1	64	1	125	2	162	1	198	1	247	......	284	1	332	......
25	5	65	1	126	2	163	......	199	1	248	......	285	......	334	......
26	1	67	1	127	......	164	1	212	......	249	......	286	......	335	......
27	4	68	1	128	......	165	......	213	......	251	1	287	1	336	......
28	4	69	......	129	1	166	......	214	......	252	......	288	......	337	......
29	1	71	1	131	......	167	......	215	2	253	......	289	2	338	1
31	2	72	2	132	1	168	1	216	5	254	1	291	1	339	3
32	......	73	1	133	......	169	1	217	......	255	......	292	3	341	......
34	......	74	3	134	......	171	......	218	......	256	......	293	......	342	......
35	1	75	......	135	......	172	......	219	......	257	2	294	......	343	......
36	1	76	2	136	......	173	......	221	......	258	1	295	1	344	3
37	1	78	1	137	......	174	......	223	1	259	1	296	1	345	1
38	3	79	......	138	......	175	2	224	......	261	3	297	......	346	......
39	2	81	1	139	......	176	5	225	4	262	1	298	......	347	......
41	1	82	4	141	2	177	......	226	......	263	1	299	1	348	......

Showing the Number of Alarms—Continued.

Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.
349	1	386	......	434	......	472	1	519	......	557	......	594	......	612	......
351	1	387	1	435	......	473	1	521	8	558	......	595	......	643	......
352	4	388	......	436	......	474	1	522	......	559	......	596	......	644	......
353	......	389	2	437	3	475	......	523	......	561	......	597	2	645	1
354	......	391	8	438	......	476	......	524	2	562	......	598	3	646	1
355	......	392	1	439	1	477	......	525	......	563	......	599	......	647	1
356	3	393	6	441	......	478	......	526	......	564	......	612	10	648	......
357	.....	394	......	442	2	479	1	527	1	565	......	613	3	649	1
358	3	395	......	443	......	481	1	528	......	566	2	614	......	651	......
359	......	396	......	445	......	482	2	529	1	567	......	615	......	652	1
361	1	397	1	446	1	483	1	531	1	568	1	616	3	653	......
362	1	398	1	447	......	484	1	532	1	569	1	617	......	654	5
363	1	399	......	448	......	485	1	533	......	571	3	618	......	655	......
364	1	412	......	449	......	486	1	534	3	572	2	619	......	656	......
365	......	413	2	451	......	487	......	535	2	573	2	621	......	657	......
366	......	414	1	452	1	488	......	536	1	574	2	622	2	658	2
367	3	415	......	453	......	489	1	537	......	575	......	623	1	659	......
368	.....	416	......	454	1	491	.....	538	......	576	1	624	......	661	......
369	......	417	3	455	2	492	......	539	......	577	......	625	1	662	......
371	......	418	1	456	......	493	......	541	1	578	......	626	2	663	......
372	......	419	2	457	......	494	.....	542	......	579	2	627	6	664	2
373	......	421	2	458	......	495	......	543	......	581	......	628	2	665	1
374	3	422	......	459	......	496	2	544	1	582	......	629	1	667	......
375	1	423	......	461	1	497	......	545	1	583	3	631	......	668	1
376	......	424	......	462	1	498	......	546	3	584	1	632	2	669	......
377	1	425	1	463	2	499	1	547	3	585	......	633	......	671	......
378	1	426	......	464	2	512	1	548	......	586	......	634	......	672	......
379	......	427	1	465	1	513	1	549	1	587	......	635	......	673	......
381	......	428	1	466	1	514	......	551	1	588	......	636	1	674	2
382	1	429	2	467	......	515	2	552	2	589	1	637	......	675	1
383	......	431	......	468	.....	516	......	553	......	591	......	638	......	676	1
384	......	432	1	469	5	517	......	554	3	592	2	639	......	677	5
385	1	433	1	471	2	518	1	556	3	593	......	641	......	678	1

Showing the Number of Alarms—Continued.

Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.
679	1	727	2	764	......	813	......	849	1	886	......	935	......	972	......
681	1	728	......	765	2	814	......	851	......	887	......	936	......	973	......
682	......	729	1	766	2	815	1	852	......	889	......	937	......	974	1
683	......	731	......	767	......	816	4	853	......	891	......	938	1	975	......
684	1	732	......	768	1	817	1	854	......	892	......	939	......	976	2
685	......	733	2	769	......	818	1	855	......	893	......	941	1	977	3
686	1	734	......	771	1	819	......	856	......	894	......	942	......	978	1
687	......	735	......	772	1	821	......	857	......	895	......	943	......	979	......
688	......	736	......	773	2	822	......	858	......	896	......	944	......	981	1
689	......	737	......	774	1	823	1	859	3	897	3	945	2	982	......
691	......	738	......	775	3	824	3	861	......	898	......	946	......	983	1
692	......	739	......	776	......	825	......	862	......	899	......	947	4	984	......
693	3	741	5	778	1	826	3	863	......	912	......	948	......	985	1
694	1	742	......	779	3	827	2	864	......	913	1	949	......	986	......
695	......	743	......	781	1	828	......	865	......	914	......	951	......	987	......
696	......	744	......	782	2	829	......	866	......	915	1	952	4	988	......
697	......	745	......	783	3	831	......	867	......	916	......	953	4	989	......
698	......	746	1	784	1	832	1	868	......	917	......	954	......	991	......
699	2	747	......	785	1	833	4	869	......	918	1	955	......	992	......
712	1	748	......	786	......	834	......	871	1	919	......	956	......	993	2
713	11	749	......	787	......	835	......	872	......	921	1	957	......	994	1
714	......	751	......	788	2	836	......	873	......	922	......	958	2	995	......
715	2	752	......	789	1	837	1	874	......	923	......	959	1	996	1
716	......	753	2	791	2	838	1	875	1	924	......	961	......	997	......
717	......	754	1	792	......	839	......	876	2	925	......	962	......	998	......
718	......	755	1	793	3	841	2	877	2	926	......	963	1	1212	1
719	......	756	......	794	......	842	......	878	......	927	2	964	......	1213	2
721	......	757	1	795	3	843	......	879	......	928	......	965	1	1214	......
722	......	758	......	796	1	844	......	881	......	929	......	966	......	1215	3
723	......	759	1	797	2	845	......	882	1	931	......	967	2	1216	1
724	......	761	1	798	......	846	1	883	......	932	1	968	......	1217	3
725	......	762	1	799	......	847	......	884	2	933	......	969	......	1218	2
726	......	763	......	812	......	848	......	885	......	934	......	971	3	1219	......

Showing the Number of Alarms—Continued.

Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.	Box.	Alarms.
1221	......	1258	......	1295	......	1345	......	1382	......	1429	......	1467	......
1223	3	1259	2	1296	......	1346	......	1383	......	1431	......	1468	......
1224	......	1261	......	1297	1	1347	2	1384	......	1432	......	1469	......
1225	......	1262	......	1298	......	1348	......	1385	......	1433	......	1471	......
1226	1	1263	......	1299	1	1349	......	1386	......	1434	......	1472	......
1227	1	1264	......	1312	......	1351	......	1387	......	1435	......	1473	......
1228	......	1265	......	1314	......	1352	......	1388	......	1436	......	1474	......
1229	1	1266	1	1315	1	1353	......	1389	......	1437	......	1476	......
1231	1	1267	......	1316	......	1354	......	1391	......	1438	......	1477	......
1232	8	1268	......	1317	......	1355	......	1392	......	1439	......	1478	......
1233	......	1269	2	1318	......	1356	......	1393	......	1441	......	1479	......
1234	......	1271	......	1319	......	1357	......	1394	......	1442	......	1480	......
1235	1	1272	......	1321	......	1358	......	1395	......	1443	......	1481	......
1236	......	1273	......	1322	......	1359	......	1396	......	1445	......	1482	......
1237	1	1274	......	1323	1	1361	1	1397	......	1446	......	1483	......
1238	......	1275	1	1324	......	1362	2	1398	......	1447	......	1484	......
1239	......	1276	......	1325	......	1363	1	1399	......	1448	......	1485	......
1241	1	1277	......	1326	......	1364	1	1412	......	1449	......	1486	......
1242	......	1278	......	1327	......	1365	1	1413	......	1451	......	1487	......
1243	......	1279	......	1328	......	1366	1	1414	......	1452	......	1488	......
1244	......	1281	......	1329	......	1367	......	1415	......	1453	......	1489	......
1245	1	1282	......	1331	......	1368	1	1416	......	1454	......	1491	......
1246	......	1283	......	1332	1	1369	......	1417	......	1455	......	1492	......
1247	......	1284	......	1334	1	1371	......	1418	......	1456	......	1493	......
1248	2	1285	1	1335	......	1372	......	1419	......	1457	......	1494	......
1249	......	1286	......	1336	......	1373	......	1421	......	1458	......	1495	......
1251	......	1287	......	1337	2	1374	......	1422	......	1459	......	1496	......
1252	......	1288	2	1338	......	1375	......	1423	......	1461	......	1497	......
1253	1	1289	1	1339	......	1376	......	1424	......	1462	......	1498	......
1254	2	1291	......	1341	3	1377	2	1425	......	1463	......	1499	1
1255	......	1292	1	1342	......	1378	......	1426	......	1464	......	....	......
1256	......	1293	......	1343	......	1379	1	1427	......	1465	......	....	......
1257	2	1294	......	1344	......	1381	......	1428	......	1466	......	....	......

Showing the Number of Permits issued to each Company and the purpose for which granted.

	OVERHEAD.							UNDERGROUND.				
	WIRES.				POLES.							
	Running of New	Repairs to and Removal of	Removal of	Suspension of Ærial Cables.	Erection of	Resetting of	Removal of	Approval of New Work.	To make Service Connections.	General Repairs.	To draw in Cables.	Totals.
American District Telegraph Co.	8	22										30
American Telephone and Telegraph Co.		3				1		5			1	10
Ammonia Company of Philadelphia		1				1						2
Atlantic Refining Co.	1	1										2
Baltimore and Ohio Telegraph Co.	2	2			1		1					6
Bell Telephone Company of Philadelphia	1,055	1			22	7		16				1,101
Brush Electric Light Co.	116	14	1		28	26		9		5		199
Bureau of Gas		2				1						3
Bureau of Water	1											1
Cheltenham Electric Light, Heat and Power Co.	1	1	1									3
Columbia Electric Light Co.						1		10		1	1	13
Diamond Electric Co.	27	2			8							37

Showing the Number of Permits issued to each Company, etc.—Continued.

	OVERHEAD.							UNDERGROUND.				
	WIRES.				POLES.							
	Running of New	Repairs to and Removal of	Removal of	Suspension of Ærial Cables.	Erection of	Resetting of	Removal of	Approval of New Work.	To make Service Connections.	General Repairs.	To draw in Cables.	Totals.
Edison Electric Light Co.								242				242
Fairmount Park Transportation Co.						3						3
Germantown Electric Light Co.	5	2			2	3	1					13
Harrison Brothers & Co.		2										2
Hestonville, Mantua and Fairmount Pass. R. W. Co.		1										1
Holmesburg, Tacony and Frankford Electric R. W. Co.	6				1	6						13
Kensington Electric Co.	29	2			3			4				38
Knickerbocker Ice Co.	2	2										4
Manayunk and Roxborough Incline Plane & R. W. Co.	2				2							4
Manufacturers' Electric Co.	54	2			10	5						71
Mutual Union Telegraph Co.			2			2	1					5
Northern Electric Light and Power Co.	91	2			4	2						99

Showing the Number of Permits issued to each Company, etc.—Continued.

	OVERHEAD.							UNDERGROUND.				
	WIRES.				POLES.							
	Running of New	Repairs to and Removal of	Removal of	Suspension of Ærial Cables.	Erection of	Resetting of	Removal of	Approval of New Work.	To make Service Connections.	General Repairs.	To draw in Cables.	Totals.
Pennsylvania Heat, Light and Power Co.		1		1	2			15				19
Pennsylvania Railroad Co.	14	6	5	2		1						28
Philadelphia Local Telegraph Co.		8				5	1					14
Philadelphia, Reading and Pottsville Telegraph Co.	31	10	6	2	4	3	7					63
Philadelphia Standard Telephone and Telegraph Co.								4		1		5
Postal Telegraph-Cable Co.	7	6				2						15
Pneumatic Fire Alarm Telegraph Co.		2										2
Pneumatic Transit Co.								11				11
Powelton Electric Co.	74	5			17	10						106
Southern Electric Light and Power Co.	33	3			17	3	1					57
Suburban Electric Co.	34	2	1		21	6						64
Union Traction Co.	38	9	6		7	40	10				1	111

Showing the Number of Permits issued to each Company, etc.—Continued.

	OVERHEAD.							UNDERGROUND.				Total.
	WIRES.				POLES.							
	Running of New	Repairs to and Removal of	Removal of	Suspension of Ærial Cables.	Erection of	Resetting of	Removal of	Approval of New Work.	To make Service Connections.	General Repairs.	To draw in Cables.	
United States Electric Lighting Company of Penna....	3	1	....	....	....	....	....	....	....	....	....	4
West End Electric Co..	4	2	....	....	....	....	....	8	....	....	....	14
Western Union Telegraph Co..................................	17	44	7	1	3	16	10	....	1	2	....	101
Wissahickon Electric Light Co..............................	23	....	....	....	5	9	....	....	....	....	....	37
Wissahickon Electric Passenger Railway Co............	2	....	....	....	....	1	....	....	....	....	....	3
Totals..	1,680	161	29	6	157	153	32	324	1	9	4	2,556

Number of Miles of Overhead and Underground Wires.

Name of Company.	Mileage of wire on City poles.	Mileage of wire on other poles.	Mileage of wire on fixtures and buildings.	Totals.
American District Telegraph Company	9.58	.08	81.25	90.91
American Telephone and Telegraph Company	....	111.05	74.12	185.17
Ammonia Company of Philadelphia	1.50	2.25	....	3.75
Atlantic and Pacific Telegraph Company	.62	12.94	....	13.56
Atlantic Refining Company	10.00	10.00	12.00	32.00
Baltimore and Ohio Telegraph Company	2.00	....	....	2.00
Bell Telephone Company of Philadelphia	31.00	1,126.70	3,093.55	4,251.25
Brush Electric Light Company	61.58	186.57	....	248.15
Cheltenham Electric Light, Heat and Power Co	....	7.57	....	7.57
Diamond Electric Company	14.40	83.10	....	97.50
Electric Traction Company	....	133.11	....	133.11
Elkinton, Joseph S. and Thomas	8.00	....	....	8.00
Fairmount Park and Haddington Pass. Railway Co	....	4.34	....	4.34
Germantown Electric Light Company	17.05	76.85	....	93.90
Girard Point Storage Company	10.00	....	....	10.00
Harrison Brothers & Company	4.58	5.50	.50	10.58
Hestonville, Mantua & Fairmount Pass. Railway Co	....	25.28	....	25.28
Hestonville and Overbrook Passenger Railway Co	....	.15	....	.15
Holmesburg, Tacony & Frankford Pass. Railway Co.	....	51.13	....	51.13
Kensington Electric Company	12.00	29.00	....	41.00
Knickerbocker Ice Company	13.00	....	....	13.00
Manufacturers' Electric Company	35.60	114.27	....	149.87
Mutual Union Telegraph Company	....	335.61	....	335.61
Northern Electric Light and Power Company	39.00	136.00	....	175.00
Pennsylvania Railroad Company	4.00	59.98	.80	64.78
Peoples' Traction Company	....	108.24	....	108.24
Philadelphia Local Telegraph Company	3.00	28.65	.11	31.76
Philadelphia Local Telegraph Company	1.60	23.55	7.05	32.20
Philadelphia, Reading & Pottsville Telegraph Co	4.54	10.72	....	15.26
Philadelphia Traction Company	....	283.91	....	288.91
Pneumatic Fire Alarm Telegraph Company	1.00	....	20.00	21.00
Postal Telegraph-Cable Co	3.40	191.08	27.50	221.98

Number of Miles of Overhead and Underground Wires—Continued.

Name of Company.	Mileage of wire on City poles.	Mileage of wire on other poles.	Mileage of wire on fixtures and buildings.	Totals.
Powelton Electric Company	30.50	106.95		137.45
Roxborough, Chestnut Hill & Norristown Railway Co.		35.00		35.00
Southern Electric Light and Power Company	41.00	198.10		239.10
Suburban Electric Company	12.25	178.25		190.50
United States Electric Lighting Company	17.10	60.10		77.20
West End Electric Company	1.16	12.00		13.16
Western Union Telegraph Company	1.19	476.25		477.44
Wissahickon Electric Light Company	8.83	18.15		26.98
Wissahickon Electric Passenger Railway Company	.10	11.08		11.18
	399.58	4,253.51	3,316.88	9,502.87
City Wires				108.24
Total Overhead Wires				9,502.87

Underground Wires.	Electric light and power wires.	Telephone and telegraph wires.	Totals.
American District Telegraph Company		13.83	13.83
American Telephone and Telegraph Company		970.22	970.22
Bell Telephone Company of Philadelphia		19,136.34	19,136.34
Brush Electric Light Company	53.43		53.43
Columbia Electric Light Company	11.73		11.73
Edison Electric Light Company	144.71		144.71
Electric Traction Company	210.04		210.04
Fairmount Park and Haddington Pass. Railway Co.	1.06		1.06
Girard Estate	1.40		1.40
Hestonville, Mantua & Fairmount Pass. Railway Co.	23.40		23.40
Kensington Electric Company	4.00		4.00
Keystone Electric Light Company	11.15		11.15

Number of Miles of Overhead and Underground Wires—Continued.

Underground Wires.	Electric light and power wires.	Telephone and telegraph wires.	Totals.	
Manufacturers' Electric Company	5.14	....	5.14	
Northern Electric Light and Power Company	7.66	....	7.66	
Pennsylvania Heat, Light and Power Company	2.76	....	2.76	
Pennsylvania Railroad Company	....	83.22	83.22	
People's Traction Company	135.79	....	135.79	
Philadelphia Traction Company	645 39	....	645.39	
Pneumatic Transit Company	....	1.18	1.18	
Postal Telegraph-Cable Company	....	471.08	471.08	
West End Electric Company	14.20	....	14.20	
Western Union Telegraph Company	....	362.85	362.85	
City	45.03	2,095.84	2,141.14	
Total Underground Wires	1,317.16	23,134.56	24,451.72	24,451.72
Total Overhead and Underground Wires				33,954.59

Summary of Underground Conduits.

	Number of Conduits.	Length in Feet.	Number of Ducts.	Length in Feet.	Miles of Ducts.
American Telephone and Telegraph Co.	76	202,504	645	1,928,604	365.26
Bell Telephone Co. of Philadelphia......	522	297,851	3,828	2 335,465	442.32
Brush Electric Light Co......................	12	57,320	692	1,134,593	214.88
Columbia Electric Light Co.................	12	17,288	58	66,017	12.50
Drexel & Co...	1	559	1	559	.11
Edison Electric Light Co....................	479	312,700	1,790	623,462	118.08
Electric Traction Co............................	110	217,993	1,352	2,038,888	386.15
Fairmount Park and Haddington Passenger Railway Co...........................	2	5,139	10	21,156	4.00
Girard Estate.......................................	1	5,250	4	21,000	3.97
Hestonville, Mantua and Fairmount Passenger Railway Co....................	13	37,455	80	214,812	40.68
Kensington Electric Co.......................	2	10,800	15	85,800	16.25
Keystone Light and Power Co.............	20	5,543	20	5,543	1.05
Manufacturers' Electric Co..................	5	4,700	35	37,800	7.16
Northern Electric Light and Power Co.	21	20,837	125	154,765	29.31
Penn Electric Light Co........................	58	122,186	302	473,609	89.69
Pennsylvania Heat, Light and Power Co...	18	10,852	248	117,688	22.28
People's Traction Co...........................	42	166,571	326	1,041,271	197.21
Philadelphia Standard Telephone and Telegraph Co...................................	5	8,330	1,667	562,885	106.61
Philadelphia Traction Co....................	482	590,083	4,913	4,928,104	933.35
Pneumatic Transit Co.................... ...	24	16,126	24	22,499	4.26
Strawbridge & Clothier.......................	1	45	50		
West End Electric Co.........................	8	14,410	50	94,470	17.94
City	51	254,792	580	1,766,366	334.59
Total...	1,965	2,379,388	16,815	17,675,306	3,347.65

Number of Electric Arc Lights in each Ward, together with the Number of Free Lights, December 31, 1897.

	Number of Lights Overhead.	UNDERGROUND.		Total.
		On City Cables.	On other Cables.	
First Ward	216	....	....	216
Second Ward	139	17	....	156
Third Ward	122	34	....	156
Fourth Ward	150	3	....	153
Fifth Ward	126	....	41	167
Sixth Ward	111	14	20	145
Seventh Ward	152	12	20	184
Eighth Ward	99	31	49	179
Ninth Ward	84	60	14	158
Tenth Ward	132	14	9	155
Eleventh Ward	122	....	1	123
Twelfth Ward	119	....	8	127
Thirteenth Ward	97	13	6	116
Fourteenth Ward	119	46	7	172
Fifteenth Ward	110	126	5	241
Sixteenth Ward	133	....	12	145
Seventeenth Ward	138	....	13	151
Eighteenth Ward	179	....	1	180
Nineteenth Ward	210	23	....	233
Twentieth Ward	202	12	26	240
Twenty-first Ward	163	....	....	163
Twenty-second Ward	219	....	....	219
Twenty-third Ward	212	....	....	212
Twenty-fourth Ward	183	30	....	213
Twenty-fifth Ward	165	....	....	165
Twenty-sixth Ward	127	51	....	178
Twenty-seventh Ward	303	....	....	303
Twenty-eighth Ward	127	....	....	127
Twenty-ninth Ward	175	27	....	202
Thirtieth Ward	159	38	....	197
Thirty-first Ward	190	....	....	190

Number of Electric Arc Lights, etc.—Continued.

	Number of Lights Overhead.	UNDERGROUND.		Total.
		On City Cables.	On other Cables.	
Thirty-second Ward	191	48	....	239
Thirty-third Ward	160	....	....	160
Thirty-fourth Ward	176	....	....	176
Thirty-fifth Ward	331	....	....	331
Thirty-sixth Ward	156	21	....	177
Thirty-seventh Ward	100	19	....	119
Thirty-eighth Ward	139	20	....	159
South Street Bridge	6	....	....	6
Chestnut Street Bridge	4	....	....	4
Market Street Bridge	....	4	....	4
Callowhill Street Bridge	13	....	....	13
Girard Avenue Bridge	4	....	....	4
Walnut Street Bridge	....	21	....	21
Falls of Schuylkill Bridge	7	....	....	7
Total	6,070	684	232	6,986
GIRARD ESTATE LIGHTS.				
Delaware avenue, from Vine to South streets	26	....	....	26
Front street, from Vine to South streets	....	24	....	24
Total Girard Estate Lights	....	....	....	50

FREE LIGHTS.

Diamond Electric Co	10
Kensington Electric Co	10
Manufacturers Electric Co	10
Powelton Electric Co	10
Southern Electric Light and Power Co	10
West End Electric Co	15
Suburban Electric Co	5
Northern Electric Light and Power Co	10
Peoples Traction Co	3
Total free lights	83
Grand total	7,119

Return of License Charges for Attachments to City Poles, Maintenance of Poles, Erection of Poles, and Mileage of Wires Overhead, for the year 1897.

	Attachments.		Maintenance of Poles.		Erection of Poles.		Wire on City Poles.		Wire on other Poles and Buildings.		Total.		Total Charges.
	Paid.	Unpaid.	Paid.	Unpaid.	Paid.	Unpaid.	Paid.	Unpaid.	Paid.	Unpaid.	Paid.	Unpaid.	
American District Telegraph Company	$198 00		$9 00				$22 50		$242 50		$472 00		$472 00
American Telegraph and Telephone Company			96 00						467 50		563 50		563 50
Ammonia Company, of Philadelphia	28 00		6 00				5 00		5 00		44 00		44 00
Atlantic and Pacific Telegraph Company		$4 00		$263 00				$2 50		$32 50		$302 00	302 00
Atlantic Refining Company	163 50		4 00				25 00		55 00		252 50		252 50
Baltimore & Ohio Telegraph Company	46 00						5 00				51 00		51 00
Bell Telephone Company, of Philadelphia	1,009 50		1,662 00		$380 00		140 00		2,502 50		5,694 00		5,694 00
Brush Electric Light Company	1,047 50		1,743 00		1,335 00		330 00		895 00		5,350 50		5,350 50
Cheltenham Electric Light, Heat and Power Co.			58 00						25 00		83 00		83 00
Diamond Electric Company	183 50		754 00		345 00		90 00		380 00		1,752 50		1,752 50
Elkinton, Joseph S. and Thomas	125 00						20 00				145 00		145 0
Germantown Electric Light Company	290 00		796 00		365 00		80 00		355 00		1,886 00		1,886 00
Girard Point Storage Company	69 00						25 00				94 00		94 00
Harrison Brothers & Company	76 50		44 00				12 50		15 00		148 00		148 00
Kensington Electric Company	235 00		316 00		230 00		60 00		125 00		966 00		966 00
Knickerbocker Ice Company	143 50						35 00				178 50		178

Return of License Charges for Attachments to City Poles, &c.—Continued.

	Attachments.		Maintenance of Poles.		Erection of Poles.		Wires on City Poles.		Wires on other Poles and Buildings.		Total.		Total Charges.
	Paid.	Unpaid.	Paid.	Unpaid.	Paid.	Unpaid.	Paid.	Unpaid.	Paid.	Unpaid.	Paid.	Unpaid.	
Manufacturers' Electric Company	$794 50		$879 00		$385 00		$170 00		$555 00		$2,783 50		$2,783 50
Mutual Union Telegraph Company				$549 00						$917 50		$1,466 50	1,436 50
Northern Electric Light and Power Company	646 50		663 00		30 00		180 00		570 00		2,089 50		2,089 50
Pennsylvania Railroad Company	67 00		79 00				12 50		112 50		271 00		271 00
Philadelphia Local Telegraph Company	86 50		451 00				12 50		145 00		695 00		695 00
Philad'a, Reading and Pottsville Telegraph Co.		$128 00		205 00				$17 50		127 50		478 00	478 00
Pneumatic Fire Alarm Telegraph Company	18 50						2 50		50 00		71 00		71 00
Postal Telegraph Cable Company				290 00				10 00		545 00		845 00	845 00
Powelton Electric Company	595 00		1,282 00		755 00		140 00		400 00		3,172 00		3,172 00
Southern Electric Light and Power Company	557 00		1,563 00		1,075 00		175 00		725 00		4,095 00		4,095 00
Suburban Electric Company	236 00		1,781 00		105 00		70 00		870 00		3,062 00		3,062 00
United States Electric Lighting Company	378 00		492 00				90 00		300 00		1,260 00		1,260 00
West End Electric Company	19 00		125 00		15 00		5 00		60 00		224 00		224 00
Western Union Telegraph Company		5 00		755 00				5 00		1,195 00		1,960 00	1,960 00
Wissahickon Electric Light Company	155 00		251 00		130 00		40 00		70 00		646 00		646 00
Total	$7,173 00	$137 00	13,054 00	$2,062 00	$5,150 00		$1,747 50	$35 00	$8,925 00	$2,817 50	36,049 50	$5,051 50	$41,101 00

Appropriations to the Department of Public Safety (Electrical Bureau), with the Expenditures and Balances for 1897.

General Appropriation.		Amount appropria'd.	Amount counters'g'd	Balance merging.	Balance not merging
Items.					
1. For salaries:					
Chief	$5,000 00				
Manager	3,000 00				
Assistant manager	1,600 00				
Assistant manager	1,500 00				
Chief clerk	2,000 00				
First assistant clerk	900 00				
Second assistant clerk and messenger	750 00				
Stenographer and typewriter	500 00				
Draughtsman	1,000 00				
Chief line inspector $1,200, uniform $40	1,240 00				
Eight inspectors, $1,180 each, uniforms $40 each	9,760 00				
Twenty operators at $1,100 each, and $40 for uniforms each	22,800 00				
Foreman $900, and $40 for uniform	940 00				
Eight linemen at $850 each, and $40 for uniforms each	7,120 00				
Batteryman	900 00				
Electrical plumber, $1,000, and unif'm $40	1,040 00				
Two assistant electrical plumbers, $900, and $40 for uniforms each	1,880 00				
Two janitors, $250 each	500 00				
	$62,430 00				
Transferred from, ordinance approved November 4, 1897	1,000 00				
		$61,430 00	$60,986 03	$443 97	
2. For repairs, instruments, supplies, and labor	$15,000 00				
Received by transfer, ordinance approved November 4, 1897	5,000 00				
		20,000 00	19,839 20	160 80	
3. For iron posts, mast arms, hauling, supplies, materials and labor		5,000 00	4,961 88	38 12	
4. For maintenance and keep of horse and wagon		400 00	400 00		
5. For keep of horse and wagon for Chief line inspector		400 00	400 00		

Appropriations, Expenditures and Balances—Continued.

General Appropriation.	Amount appropria'd.	Amount counters'g'd	Balance merging.	Balance not merging
Items.				
6. For acids, batteries, and materials	$6,000 00	$5,980 51	$19 49	
7. For stationery, printing, advertising, car fares, car tickets, and incidentals.............. $3,500 00 Received by transfer, ordinance approved November 4, 1897...... 500 00	4,000 00	3,947 56	52 44	
8 For painting telegraph poles, electric-light poles, cross-arms, mast-arms and patrol booths .... $2,000 00 Received by transfer, ordinance approved November 4, 1897...... 1,000 00	3,000 00	2,979 45	20 55	
9. For ice........................... $150 00 Received by transfer, ordinance approved November 4, 1897, to pay balances of ice bills for the years 1894, 1895 and 1896... 79 25	229 25	207 03	22 22	
10. For the improvement and extension of the Police and Fire Telegraph................................	7,000 00	6,968 30	31 70	
11. For the purchase or rent of telephones, purchase of materials and instruments, extension of the lines and hospital and armory service, including Brigade Headquarters National Guards of Pennsylvania, Presbyterian, Children's Homœopathic, St. Mary's, Orthopædic, Samaritan, Jefferson, West Philadelphia for Women, Howard, St. Agnes' University, St. Christopher's for Children, Fred. Douglass, Medico-Chirurgical, Polyclinic, and Women's Hospital, North College avenue and Twenty-second street, and Naval Reserves Armory. By ord. ap. June 26, 1897, St. Joseph's Hospital, at $100 per annum each...	7,300 00	7,278 32	21 68	
12. For the improvement and extension of the police signal and telephone service.....................	6,000 00	5,986 08	13 92	
13. For cables, conduits, manhole covers, iron posts, mast arms, hauling, cartage, materials and labor for underground electrical service................ $20 000 00 Rec'd by transfer, ord. approved Nov. 4, 1897. 6,420 75	26,420 75	26,038 88	381 87	

Appropriations, Expenditures and Balances—Continued.

General Appropriation.	Amount appropria'd.	Amount counters'g'd	Balance merging.	Balance not merging
Items.				
14. For labor, lamps, wiring, materials, current, and repairs for police, patrol and fire stations, and fountain in Ontario Park...	$3,000 00	$2,910 64	$89 36	
15. For electric lighting... $757,137 75 Brought from books of 1896........................ 5,951 75 $763,089 50 Transferred from, by ord. app'd Nov. 4,1897 1,600 00	761,489 50	753,582 22	1,955 53	$5,951 75
15½. For new electric lights, $42,862 25 Transferred from, by ord. app'd Nov. 4,1897 2,400 00	40,462 25	39,623 89	838 36	
16. For purchase and laying of underground conduits and constructing manholes............ $40,000 00 Transferred from, by ord. app'd Nov. 4,1897 8,000 00	32,000 00	31,995 95	4 05	
17. For rent of telephones for thirteen offices of District Surveyors (Bureau of Surveys), at 100 dollars each............... $1,300 00 Transferred from, by ord. approved Dec. 27, 1897.......................... 1.300 00				
Totals................................	$984,131 75	$974,085 94	$4,094 06	$5,951 75